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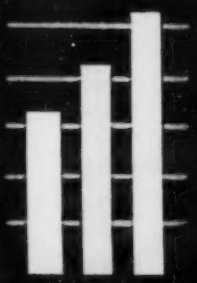
October 1961

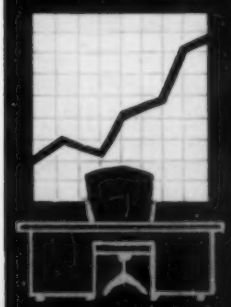


U. S. industry's investment overseas: at a new high; still going up.

Growth may come harder for Germany's "Big Three" chemical companies.

Opportunities in housing—in Latin America, and around the world.

see contents, page 11



Cost-control accounting: why is it neglected by management?

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World Affairs

The trends in motordom

October is new auto time. And auto makers—as well as myriad other businessmen who are coming to depend heavily on the industry—are anxiously studying the reactions of the consumer as he visits the salons and the dealers' showrooms.

In Western Europe: Even if the consumer is pleased with what he sees, the industry outlook is plagued by overcapacity. There is Renault, just now showing signs of recovering from a drastic fall in sales and profits. The British have had a year of trouble; now Standard-Triumph is in dire straits and even the giant British Motor Corp. warns its shareholders not to expect much profit improvement soon. Some of the Germans are beginning to feel the pinch (no one is forgetting the demise of Borgward earlier this year), though Volkswagen goes rolling merrily along.

French government planners say that on the basis of present planning, Europe's annual vehicle capacity will reach 9.3-million by 1965. This is far ahead of even the most optimistic market projections.

Indeed, officials of the European Economic Community have been privately urging auto makers to work off some of their competitive aggressiveness by getting together to analyze investment plans. This might curb expansion enough to keep the area's capacity within manageable limits.

Thus the long-awaited "shaking-out" of the industry is well under way. Some predict that almost half the producers in Western Europe will in a few years either merge with larger companies or be destroyed by competition (which will become even more intense when Britain joins with the EEC).

In the United States: The motor moguls of Detroit, always optimistic (no matter how cloudy the outlook), this year seem to have good reason for their expansive forecasts. High personal income and ample credit, rapid sales of the last 1961-model cars, firm used-car prices, and other reliable indicators have auto men talking about a record in 1962—higher even than the boom of 1955.

There is a new series of autos—an "intermediate" size larger than the so-called "compacts" introduced in 1959, smaller than the standard models. Also, a really small car comparable to Volkswagen may debut in 1962. Ford will make it, using parts from its British and German factories.

The American scene suggests more trouble for the Europeans—with the possible exception of Volkswagen, which keeps going strong in the U.S.A. Imported car sales continue to fall, from the 1959 peak of 614,000 to about 385,000 this year. And industry observers believe the imports will do well to match that figure in 1962.

A sidelight from the new McGraw-Hill capital spending survey (page 19): After a striking increase in their spending on overseas plant and equipment this year, the U.S. auto companies plan a decline for 1962.

Setback for the "Alliance"

Just as the inter-American community was congratulating itself on launching its 10-year development plan, Brazil passed through its crisis. The result: a setback for the Alliance for Progress.

Even before Brazil, there was skepticism in Latin America, in the U.S.A., and in other capital-exporting nations as to whether the Alliance commitments could be fully carried out. Brazil had been a leader in drafting the plan, and its immense influence was counted on. While many foreign businessmen disagreed with President Quadros' political actions, they were convinced that his stern economic measures were good medicine (IM—Sept, p1).

Now there is real concern whether Quadros' successors can or will stick by these policies. Certainly the crisis gave another inflationary spin to the cruzeiro. And it will be months before foreign investors (who are supposed to play an important role in the Alliance) recover their confidence in Brazil's stability.

British business for planning

Britain's Conservative government is pushing ahead with a scheme to introduce "democratic planning" into an economy still predominately dependent on private enterprise. Surprisingly, the strongest support for more national planning comes from business.

Business support comes partly because of a revulsion against the "stop and go" policies by which the British government has tried to deal with recurrent financial crises. Over the past few years, credit restrictions have been imposed, lifted, and reimposed several times—making industrial planning virtually impossible.

Also, British executives have been taking a close look at France, where business was induced to go along with state planning by large tax incentives and cheap credits. One critical difference is that France did not have Britain's responsibility for maintaining an international reserve currency. Still, British managers have been much impressed by French growth.

Letter from Madrid

"Il n'y a plus de Pyrenees . . ."

Continental businessmen looking for more lucrative investment opportunities are following the sun down to Spain in increasing numbers. The profit possibilities have grown greatly in the past two years. And Americans are joining in too. Says the U.S.A.'s *Business Week:* Spain has changed "from an investment wallflower into a Cinderella."

Behind all this fuss over Spain is the hopeful new look of its economy—quite a change from the frown of bankruptcy it wore just two years ago.

Now, businessmen who are scouting for investment opportunities in Spain report healthy signs of rising production in the industrial north; and they note a confident air about the iron and steel industry. (One reflection of this: a $13-million U.S. Export-Import Bank loan to the state-controlled steel firm, Ensidesa.)

The welcome sign is out for foreign capital as Spain has reversed its previous hostile attitude toward foreign investment. New rules permit some repatriation of profits, and the government has strongly hinted that by the end of the year it would further liberalize the rules.

Little by little, Spain's economic isolation from the rest of Europe is breaking down. Now Britain's bid to join the continental Six has provided a new sense of urgency in Madrid, and the government is discussing ways to become associated with the European trading community.

As INTERNATIONAL MANAGEMENT went to press, a statement of intentions was expected at any moment.

Spain's turning point came in 1959: Something had to be done to rejuvenate a faltering economy. To accomplish this, Spain became a full member of the Organization for European Economic Cooperation and the International Monetary Fund, and on their recommendation, drew up a reform plan. Credit was tightened; a ceiling was placed on government spending, and prices of most items were decontrolled. Also, 50% (then 60% and now 70%) of imports were freed from quota restrictions. A foreign exchange market was created, superseding the old system under which all exchange transactions had to take place through the foreign exchange institute.

The result is that Spain has shown steady improvement, and now the government is consolidating the stability which the reforms achieved. Some experts see the recent convertibility of the Spanish peseta for most non-residents as a formal acknowledgement of the success of the stabilization program.

New opportunities are opening up the financial passes across the Pyrenees into Spain, bringing financiers and industry as well.

Of the $41.6-million actually invested in the past fifteen months, 54.6% came from the U.S.A., 12.8% from France, 8.3% from Switzerland and the rest from other western countries.

British firms with new manufacturing arrangements in Spain include British Motors for commercial vehicles, Rolls-Royce for diesel engines, Jaguar and AEC for buses and trucks, Monsanto for plasticizers and stabilizers, Pye Ltd. for television sets.

Many American companies are in Spain and more are carefully investigating the opportunities there.

Last month, the Union Bank of Switzerland formed an investment fund called ESPAC, especially to invest in Spanish securities. And the Rothschild and Montague interests in London are considering setting up their own fund to invest in Spain. Merrill, Lynch, Pierce, Fenner & Smith opened Spain's first U.S. brokerage house.

Leasing in Britain

Industrial leasing—now well established in the U.S.A.—keeps growing worldwide. The latest major venture is in Britain, where three British financial groups have joined with Lease Plan International Corp. of New York to form a new company. Called Equipment Leasing Co., Ltd., it will specialize in leasing of capital equipment and vehicles to industry.

Hambros Bank, Phoenix Assurance Co., and Cable & Wireless (Holding) Ltd. will own at least 50% of the new concern; the U.S. partner will own 25% or less and the rest of the shares will be sold on the market. The new company will have authorized capital of £500,000.

Credit in the Americas

The Foreign Credit Interchange Bureau has completed its latest semi-annual survey of the commercial credit and collection experience of 326 U.S. manufacturers and exporters selling to Latin America.

In terms of credit conditions, eight countries improved their rating, three remained unchanged, and 13 lost points. The most outstanding improvement was registered by Paraguay, up 30 points on the businessmen's rating scale. The Dominican Republic dropped 46, falling from "fairly good" to "fair", and Ecuador and El Salvador dropped. Those three nations, plus Brazil and Venezuela, are the only inhabitants of the "fair" classification. In the "very poor" cellar is Cuba. All the rest of the American republics and European associated states in the Western Hemipshere rate "very good" or "fairly good".

In terms of the U.S. businessmen's collection experience, 14 markets are listed as making "prompt" payments, four as "fairly prompt," but of the 24 nations and territories only nine markets improved their ratings while 15 lost points. The same nations showing "fair" and "very poor" credit conditions turned up in the "slow" and "very slow" collection categories.

American Letter

A faster pace in trade policy . . .

How to shape U.S. foreign trade policy to keep in step with developments abroad? You will be hearing more about this question in months to come.

Officials at the White House and the State Dept. are thinking of bold changes (probably "too bold" for Congress and most industrialists, warns *Business Week*). They want to completely change the Trade Agreements Act when it comes up for renewal next year. They would have the U.S.A. negotiate automatic, across-the-board tariff cuts such as the EEC makes; now the U.S.A. only grants reciprocal cuts, product by product.

The ultimate goal is not much talked about outside the circle of experts. But it is nothing less than some day fitting the U.S. and Western Europe into a virtually free-trade system. Japan, Canada, and the developing nations would all be linked to the system (IM—Aug,p16).

Britain's decision to join the EEC helped speed this kind of thinking. The American officials now believe that the British-EEC negotiations will move faster than expected earlier.

So the U.S.A. has to be in a position to start knocking down the common barriers against U.S. goods that will be set up around Europe. And Washington will need some "leverage" to insure that Latin America is treated fairly in this market in competition with many African nations. Otherwise the obstacles to the success of the Latin American Alliance for Progress aid program will be even larger than they are now.

. . . a new look in aid policy

The new foreign aid bill puts a portion of U.S. assistance on a long-term basis for the first time. Until now, aid administrators have been assured funds only a year in advance. Further, it was doled out on a "project-by-project" basis.

Now the U.S. can offer a "country package": for example, $50-million over five years to a nation for roads, surplus foods, credits to assist housing (page 21), and the like.

Total assistance could involve over $20,000-million over the five years. For in addition to regular foreign aid at $3,000-million or more annually, the President now has authority to commit to specific countries a total of $7,200-million over five years.

But that commitment has to be hedged—and here is where President Kennedy failed to get what he wanted. The Congress, jealous of its control over spending, insisted that the President come back each year for the actual funds to cover the commitment. Thus the legislators could refuse to grant the money if (in the language of the legislation) "there is evidence of obvious bad management or the [recipient] country has failed to meet its responsibilities."

There are grounds for hope that this will not cripple the program. For the Congress has imposed a strong moral commitment on itself to follow through with the money—a commitment, says the New York Times, "in terms even stronger than those of the Marshall Plan . . ." 13 years ago.

Wall Street favorites

Which U.S. industries have the best growth prospects over the next five years? To 671 security analysts polled by the Opinion Research Corp., the top ranking favorites are electrical equipment and electronics, office equipment, and pharmaceuticals. Looking over the same period, the analysts cast jaundiced eyes on railroads, automobiles, steel, nonferrous metals. (Note that these industries are closely tied to the ups and downs of the economy. As short-term investments, cyclical shares are currently viewed with favor.)

Two industries made striking improvements in their popularity with security analysts as compared to a similar poll made three years ago. Telephone and telegraph companies are viewed favorably by 48% now, as compared to 15% three years ago. Electric utilities won a 47% vote of confidence, up from 21%.

The analysts also think a bit better of the prospects for food companies and banks. Industries that have lost some favor include chemicals, paper, petroleum.

Signs of a boom

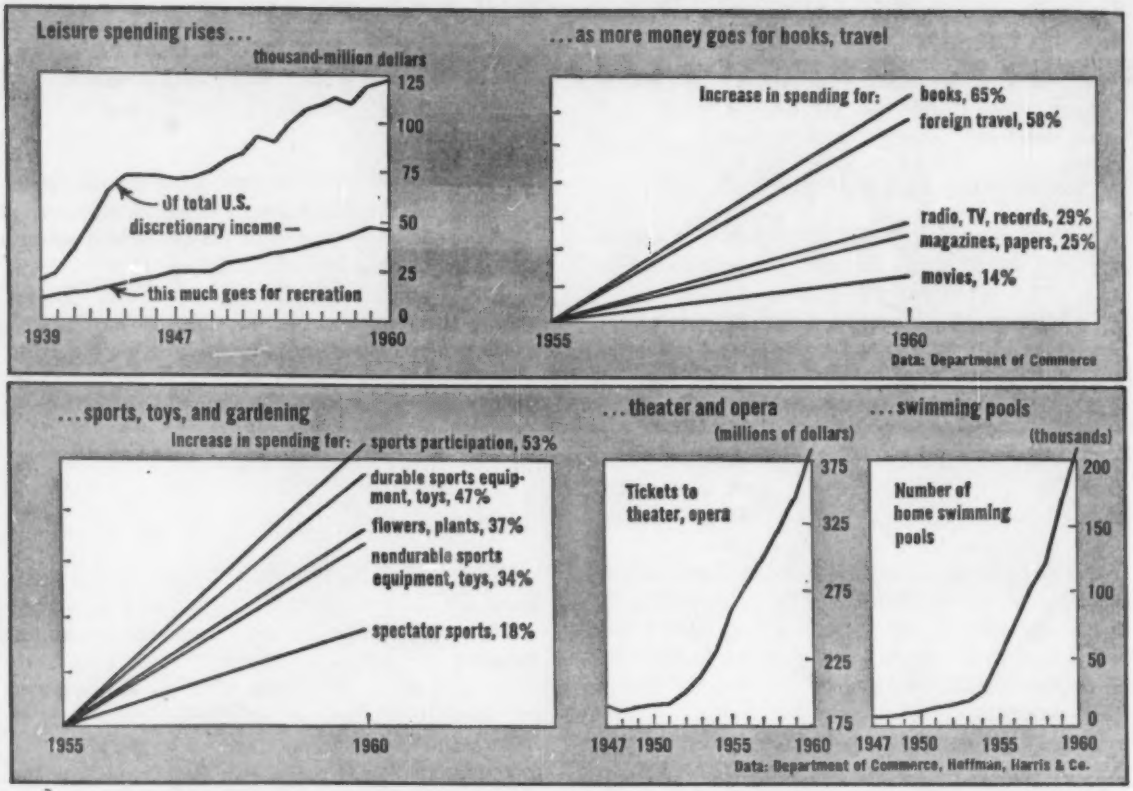
Industries that rate high with security analysts (see above) naturally rate high with investors. Or in the words of one investment banker, "Good stocks are frightfully high priced."

Still, there is little gloom in Wall Street. Going into the fall business season, economic indicators pointed to a boom of some proportions; some economists were even predicting a "super-boom."

Business has been increasing its spending to build up depleted inventories and to improve plant and equipment. Consumers have the income and credit needed to assure continuing vigorous expansion.

The proportions of the new boom will take on better perspective toward the end of this month. For one thing, you will have a reading on how auto sales are going (page 1).

turn the page



American Spending for the Leisure Life

AFTER SATISFYING its needs for the essentials of life—food, clothing, shelter, medical care, etc.—the American spending public last year was left with an average of $682 for every person in the U.S.A. This added up to a grand total of $123,000-million which consumers could save or spend any way they wanted to. More and more, consumers are choosing to spend money on leisure activities.

To find out where the money goes, The Chase Manhattan Bank recently analyzed this huge, changing market. As the charts above show, more money is going for books and travel, sports, gardening, and cultural activities. And home swimming pools obviously are no longer a rich man's luxury.

The largest segment of the leisure market is travel. Travel abroad, which has tripled over the past decade, seems to be tapering off a bit this year. Yet trips to far-away places will account for some $2,500-million of leisure spending this year.

Americans are spending more of their money seeing the U.S.A. This year, about 3 cents of every consumer dollar will be spent on domestic travel. Over $3,000-million will go for transportation, another $9,000-million will go for lodging, vacation homes, food and incidental expenses.

One of the fastest growing areas of leisure spending involves cultural activities. Spending for books has increased faster than any other type. Since 1955, book sales have increased by two-thirds, and book buying includes many more children's books, reference books, serious nonfiction.

While the cinema still lags below its postwar peak, ticket sales for the theater and opera have risen 50% over the past five years. Theater receipts last year surpassed admissions to spectator sports by one-third.

There are now 32-million amateur musicians in the U.S., and the nation supports well over half the professional symphony orchestras in the world. Comments The Chase Bank: "Visitors to the Metropolitan Museum of Art in New York City on a single Sunday would twice fill the Madison Square Garden sports arena."

As opposed to spectator sports, whose receipts have increased only moderately, interest in sports participation has risen to an all-time record. There are eight-million boats in use; 18-million people have hunting licenses, 26-million have fishing licenses. Bowling is the fastest growing sport, with 22-million participants. There are six-million tennis players, over five-million golfers, even five-million archery enthusiasts.

Chase Manhattan's economists found an explanation for the spending pattern. Sedentary jobs have risen sharply with the increases in office and professional workers; employment has decreased on farms. Thus, there is a greater need for physical exercise. The move to the suburbs also encourages interest in sports.

As for the growing interest in culture, a rising level of education appears to be the prime influence. Improved methods of communication—even television—have also broadened intellectual horizons.

On top of these influences, Americans have much more leisure time. The Chase people say the U.S. will have enjoyed a total of 82-million vacation weeks and 467-million holidays by the time this year is ended.

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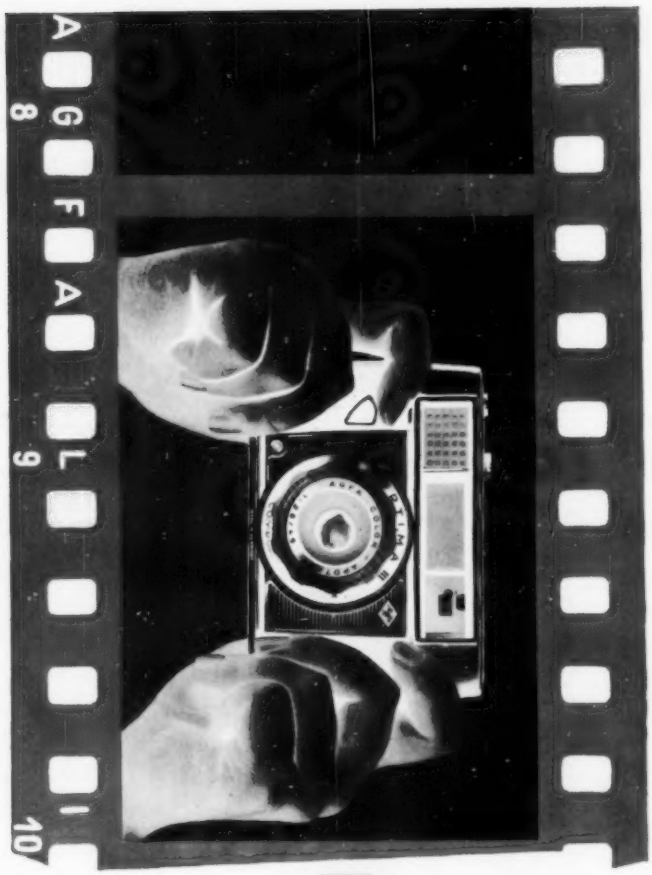

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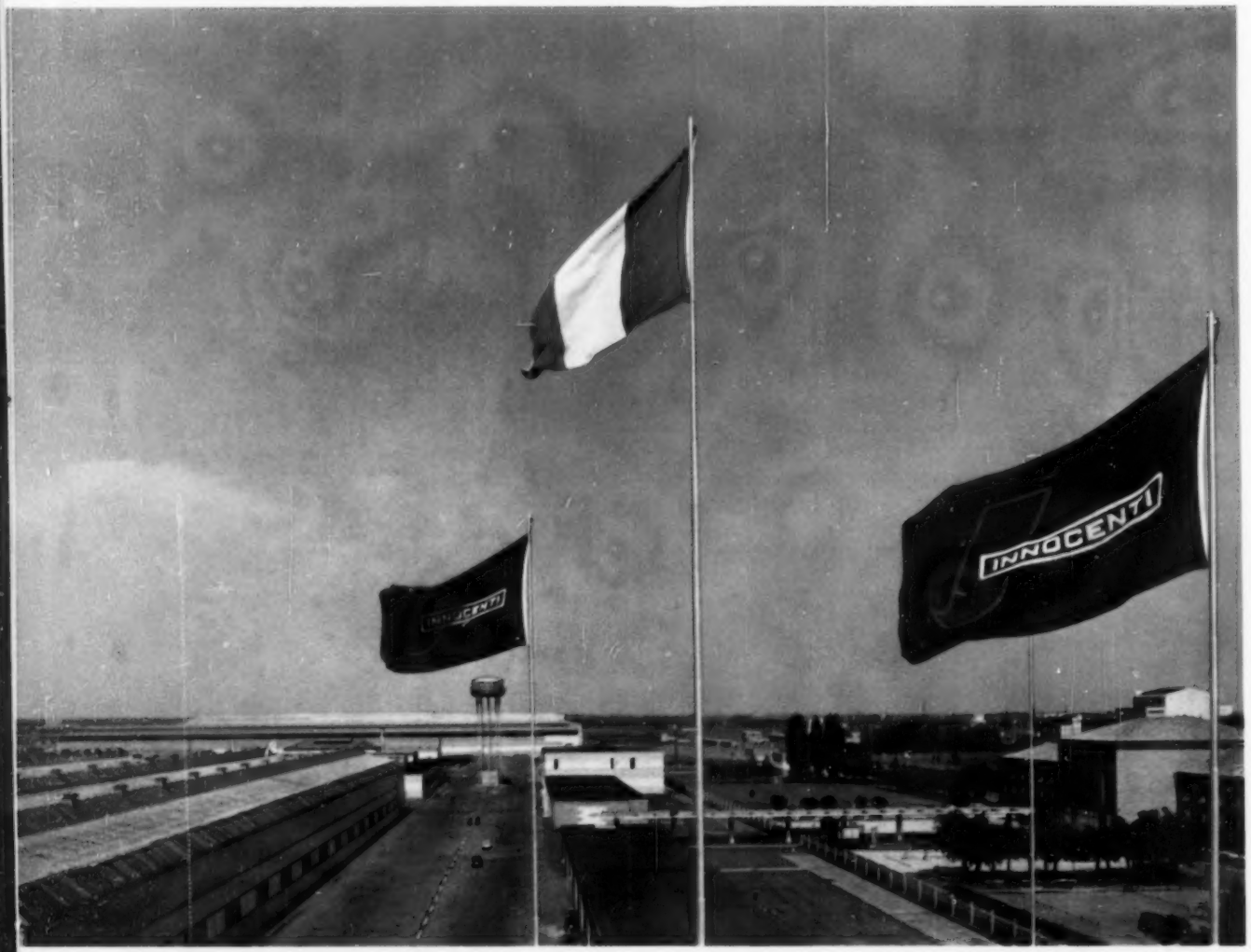

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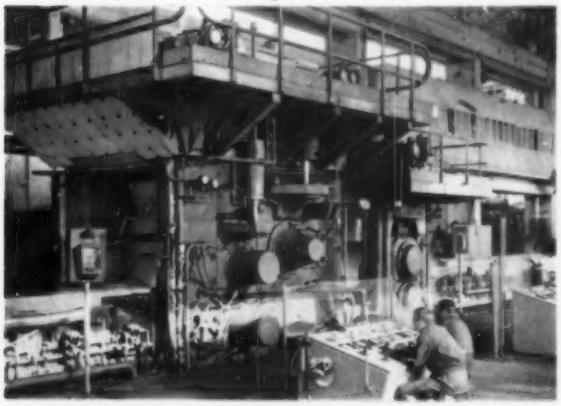
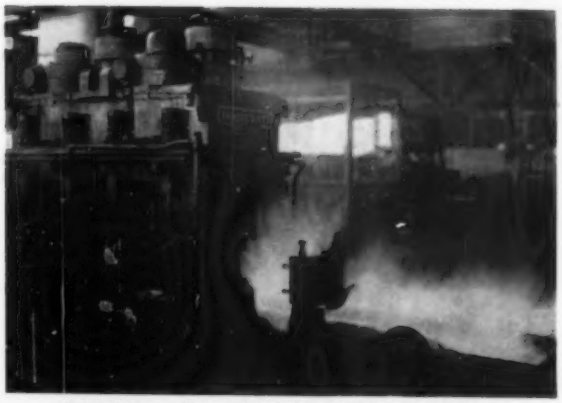
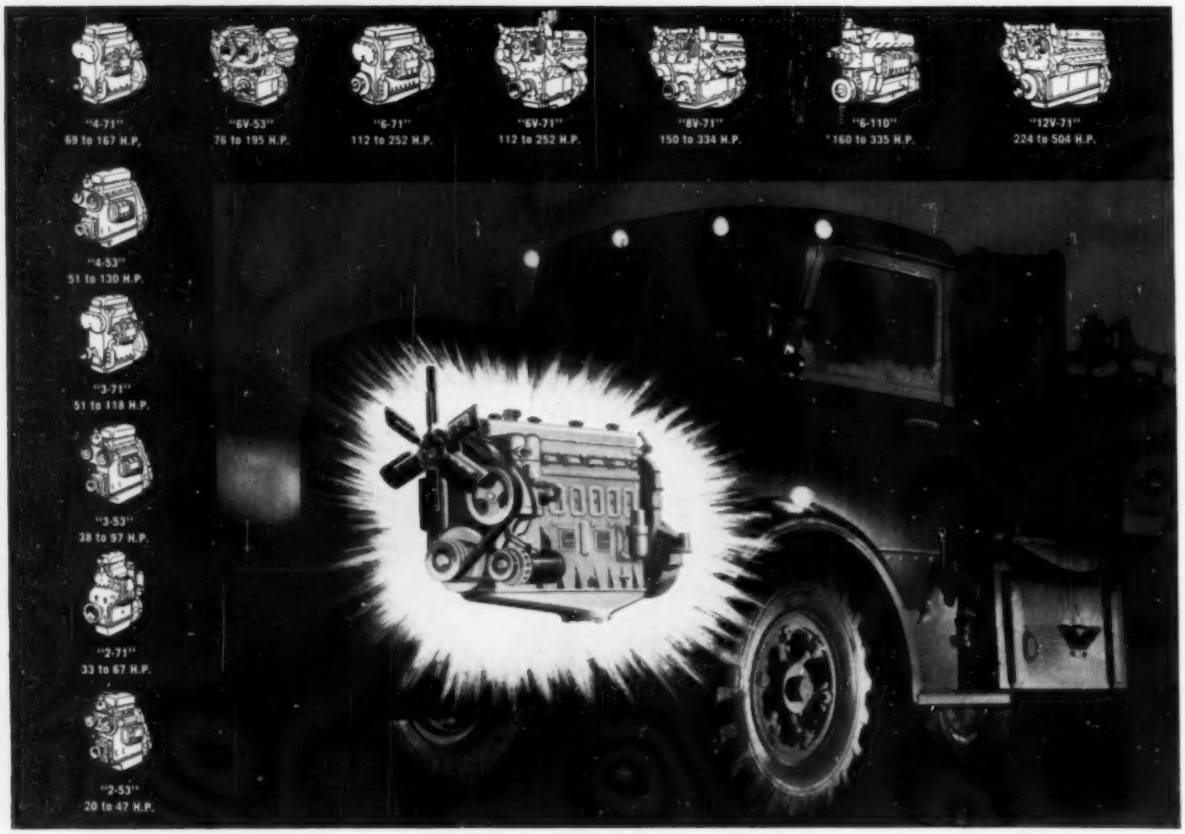




DALMINE S.p.A. (Costa Valpino). Run-out of the INNOCENTI continuous seamless steel pipe rolling mill.

DE SCHELDE (Vlissingen-Holland). INNOCENTI-CWB boring and turning machine, during a turning operation.



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S	.050 Max.°	B	.0005/.005
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Tensile Strength	80/95 kg/mm²	80/95 kg/mm²
Elongation in 2" (50.8 mm.)	18% min.	16% min.
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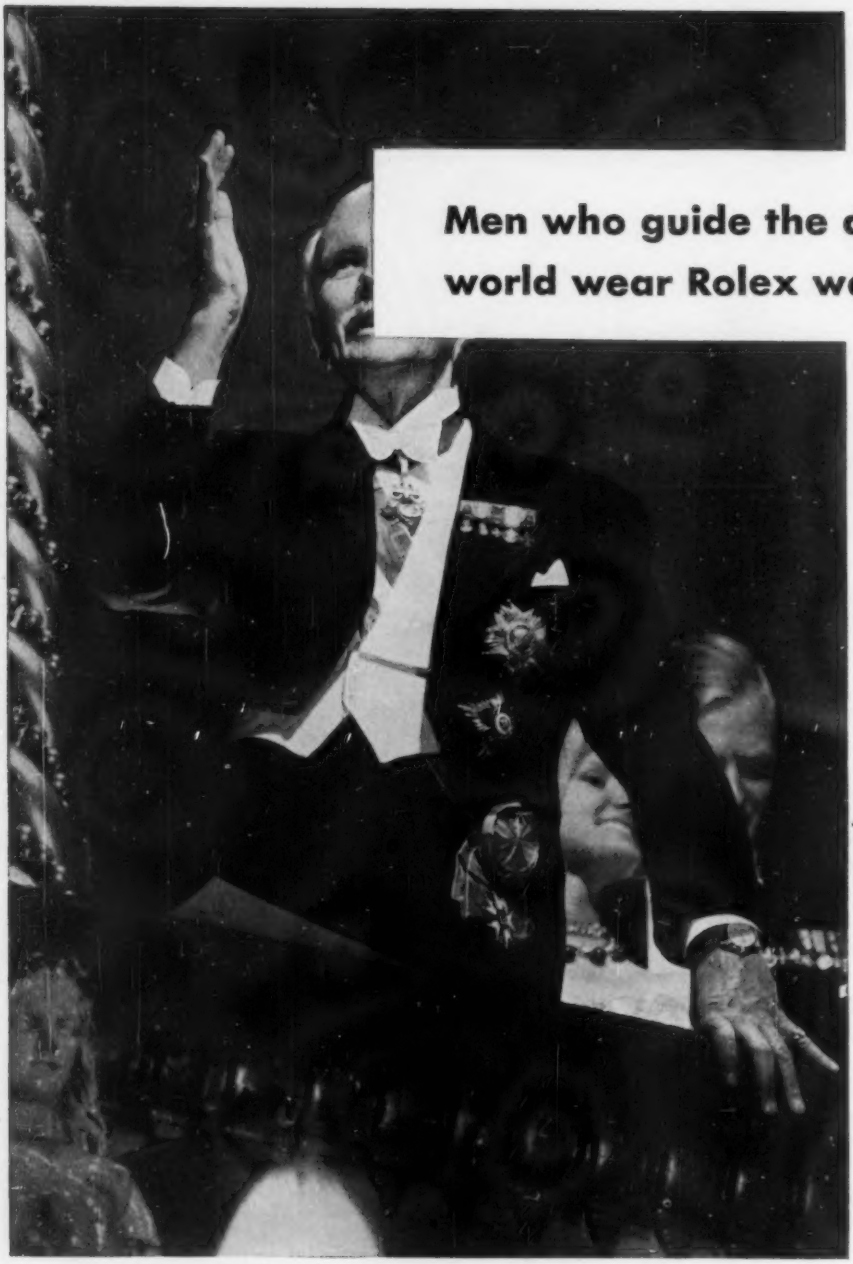

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International Management

October 1961
Vol. 16, No. 10

THE McGRAW-HILL PUBLICATION OF WORLD BUSINESS INFORMATION

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Audit Bureau of Circulation

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WHETHER YOU *make* or merely use paper, paint, electrical equipment, plastics—or virtually anything else—Cyanamid's intensive, progressive research constantly produces for you. Here are just four new developments that we think you should know about:

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CYANAMID

HERE IN THE WILD HUINCO GORGE, THE SANTA EULALIA RIVER IS BEING PUT TO WORK TO PRODUCE ELECTRIC POWER FOR METROPOLITAN LIMA. THE IBM 1401 COMPUTER IN THE FOREGROUND WILL HELP LAY OUT AN EFFICIENT POWER DISTRIBUTION SYSTEM.

IBM in the land of the Incas

Once this lovely, lonely valley, where the Rio Santa Eulalia tumbles down the Andes toward the Pacific, saw armoured conquistadors on their way to carve an empire. Now again, helmeted conquerors have moved in—construction gangs harnessing the river with roaring machines. Here a vast hydroelectric project will double the power supply of Lima, Peru's capital.

Reinforced with water piped—at an altitude of 14,000 feet—beneath the Cordillera de los Andes, the Santa Eulalia will be turned out of its bed, poured into a tunnel driven eight miles through the mountains. At tunnel's end the torrent will leap 4,000 feet down to drive four great generators in a cavern carved deep within the living rock. This one station will produce more electricity than Lima now receives from all its power plants.

The IBM computer shown on a ledge above the valley will help the Lima Light and Power Company distribute this power efficiently. Analysing a host of complex factors, the data processing system will show the best sites for transformers, substations, power lines. Later the computer will be equally valuable to Lima Light for accounting and financial analyses.

When the first Europeans came to Peru they found the Incas already solving mathematical problems by moving grains of maize on a marked board, recording the results by knots in a string—and getting accurate answers faster than the newcomers could with pen and paper. With this tradition, no wonder the heirs of the Incas use the most advanced mathematical aid—an IBM computer.

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Monsanto

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READERS' REPORT

Set the Record Straight

Sir . . . In the Personal Business column of the very interesting May issue of INTERNATIONAL MANAGEMENT you show costs of business travel. Those for Mexico City—in some instances—are out of line.

For a 1st class hotel bed and breakfast you show $12.00. This is definitely maximum, as the normal price for bed and breakfast would not exceed $8.00. For dinner, $12.00 would be deluxe with wine. A normal dinner does not cost more than $5.00 to $6.00 or less. The "Night on the Town" can, of course, be anything you want to spend. But the most significant fact that we want to bring to your attention is taxi fares, the cost being Pesos 3.00 for a 15-minute ride, equivalent to $0.25 in U.S. currency.

We bring out this point as it is one of the least expensive things that we have and we do trust that you will appreciate same when you visit us.

H. H. Fleishman
President, Comision de Fomento Industrial
Tampico, Mexico

Take a Bow

Sir . . . May I congratulate you for the excellent articles your magazine is publishing and your last "Letter from Stockholm" (August, page 2) was just another typical example of sharpness and ability when observing foreign countries. May I extend my compliments.

Erastus Oiling
AB Bromanco
Stockholm, Sweden

Sir . . . INTERNATIONAL MANAGEMENT'S commercial jet story (July, p 16) is a fabulous job of condensing a vast, complex subject into very readable and hard-hitting text. You deserve sincere congratulations.

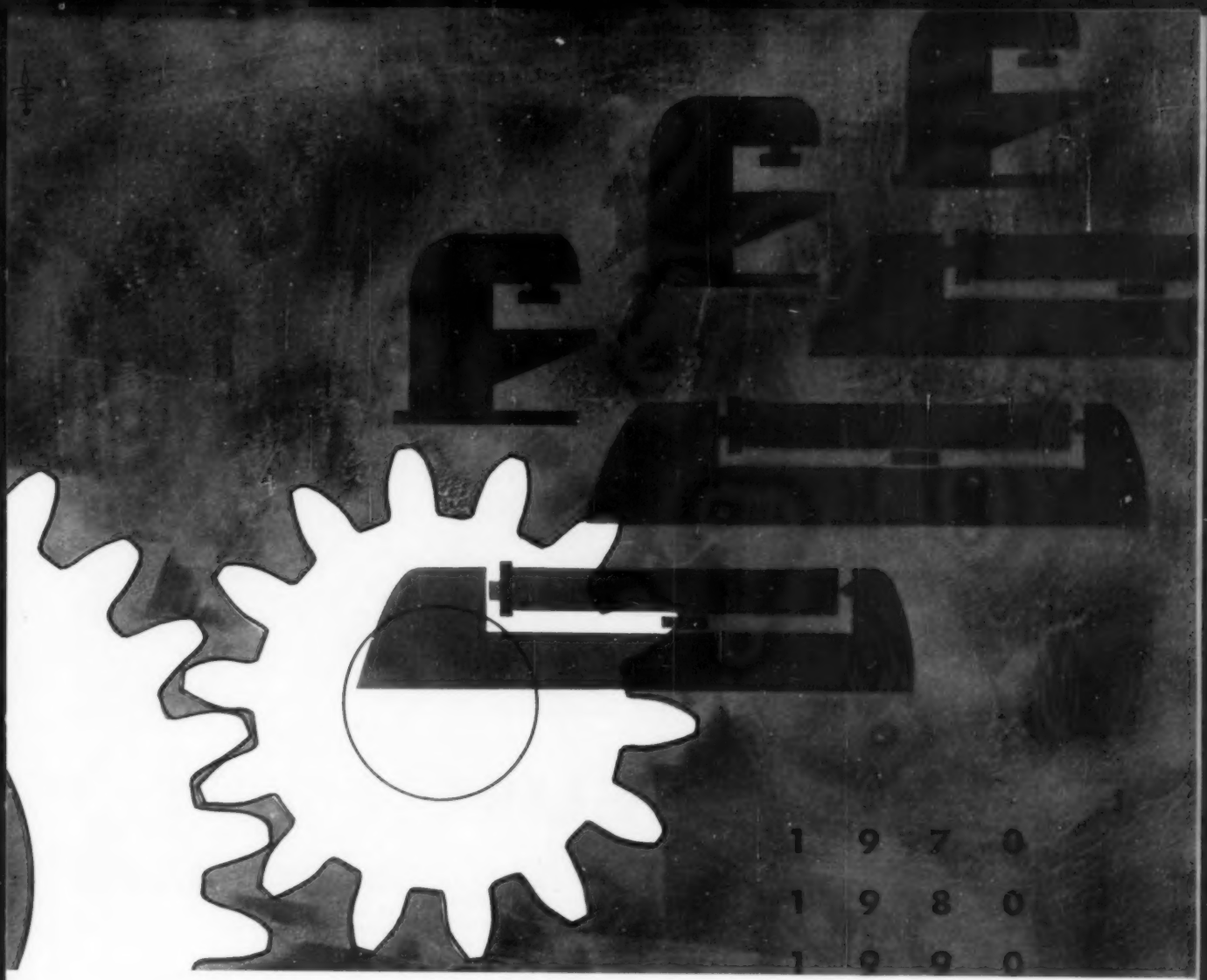
Warren E. Kraemer
Vice President
Scandinavian Airlines System Inc.
New York

Sir . . . You will be interested to know that several officers of the Institute of Surplus Dealers have commented on the excellence of the article in the September issue of INTERNATIONAL MANAGEMENT under the title: "Surplus: Bargain Counter for the World Market."

We want you to know that your interesting and well-written article about the surplus business is very much appreciated.

David Resnick
Institute of Surplus Dealers
New York

turn the page



S T E E L 2 0 0 0

By the year 2000, the world population will probably have grown from 2.8 billion to more than 6 billion*). The expansion of the production of goods will require machinery and industrial equipment in quantities hitherto unknown.

From connecting rods to continuous rolling mills, from turn-tables to the largest sets of machinery, steel is the decisive material in the ever advancing process of mechanization and automation.

On the road to the year 2000, the field of machinery, too, will have an immensely growing requirement of steel.

In 1960, about 350 million tons of steel were produced throughout the world. Experts estimate that world requirements of steel will rise to between 1.5 and 2 billion tons. This huge demand for steel calls for world-wide cooperation.

During the last decade PHOENIX-RHEINROHR increased its annual production of crude steel from 1.5 to 3.2 million tons. Intensive long-range research and planning characterize our work for the world-wide markets of the future. Our most important products: pig iron – semi-finished products – sections – steel tubes and tubular goods – plates and plate products – clad plates – SICROMAL- and RHEINROHR-special steels. One of our subsidiaries, PHOENIX-RHEINROHR-INTERNATIONAL, Düsseldorf, Thyssenhaus, delivers pipelines, refineries, fertilizer plants and water supply systems.

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We Apologize

Sir . . . I am perplexed by a statement in your publication "200 New Ways to Improve Your Business." It was: "In Italy, almost anyone can join the association of management consultants."

The ASSCO—of which this firm is proud to be a member—has a rigid admissions procedure and code of professional ethics which compares not unfavorably with that of ACME in the USA. Candidates for membership must present notarized evidence of work at a professional level, have at least two years experience as a firm with a number of leading industrial clients, and a staff consisting of at least five professional consultants.

ASSCO was officially constituted last year after over a year of discussions among leading Italian firms. It is not a club, and any competent, reputable firm in Italy that can demonstrate sufficient past experience and present staff capability would certainly be considered as a potential member. However, it is just not true that "anyone can join."

Stanley H. Hillyer
Hillyer Associates
Milan, Italy

• We regret the misunderstanding caused by the publication "200 New Ways to Improve Your Business." But note that this booklet is a collection of articles from former issues of INTERNATIONAL MANAGEMENT. Its purpose is to give new subscribers a bonus by sending them reprints of important past articles they naturally missed.

The article in question about management consulting appeared in an early 1959 issue of INTERNATIONAL MANAGEMENT, before ASSCO's formation. It was our understanding at that time that professional certification had not yet been established in Italy.—EDITOR

Provinces or Colonies?

Sir . . . It was painful to see Angola and Mozambique being described as Overseas Provinces of Portugal, in the June issue of INTERNATIONAL MANAGEMENT. The whole world knows that Angola and Mozambique are nothing but colonies of Portugal. The entire history of Portuguese colonialism is so well known that it is difficult to cloak it under any respectable term.

P. Rajagopal
STANVAC Refinery
Bombay, India.

• Portugal calls them provinces, and we will go along with the nomenclature.—EDITOR

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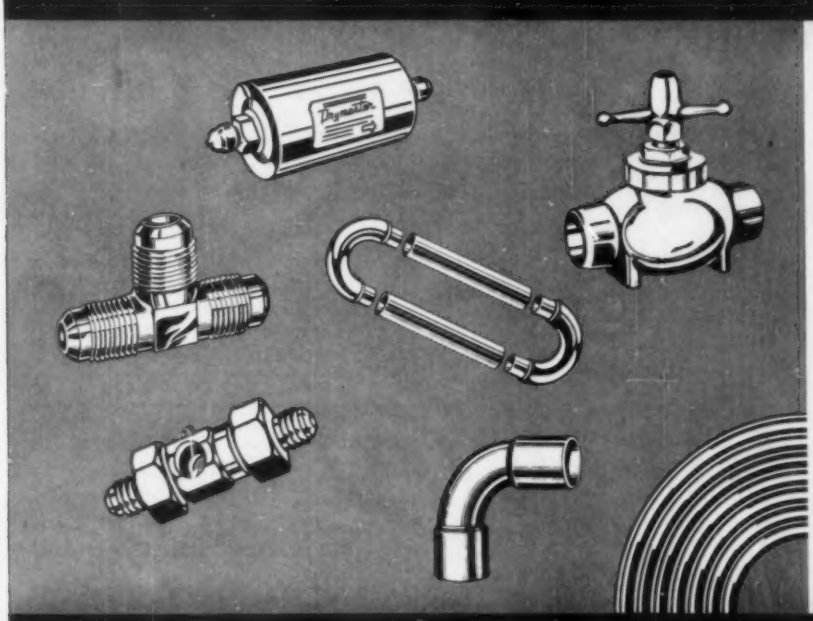

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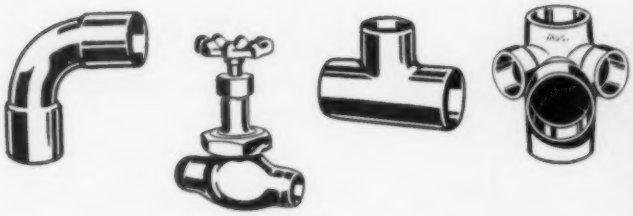
The Mueller Brass Co. offers high quality components for virtually every refrigeration and air conditioning need, including: Drymaster Filter-Driers, Linemaster Diaphragm Valves, Globemaster Packed Valves, Solder-Type or Flare Fittings, Vuemaster Liquid-Moisture Indicators, and Streamline bright, clean Dehydrated Tubing . . . also precision Return Bends as well as Heat Exchangers, Manifolds and Service Accessories.



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Streamline copper tube, solder-type fittings, valves and accessories are the industry's highest quality products in design, material and workmanship.

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Mueller Brass Co. supplies formed copper tube and assemblies to customer's specifications. Complete facilities for swaging, bending, spinning, upsetting, flaring, flattening or seating, beading and grooving, drilling, piercing, machining, joining... all at consistently close tolerances.

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GENERAL INFORMATION

For sugar and paper mills, breweries, distillers and other industrial applications, Mueller Brass Co. copper tubing is supplied to customer's specfications. Mixed groups of items can be packed for delivery to different job sites for any customer, eliminating rehandling costs.

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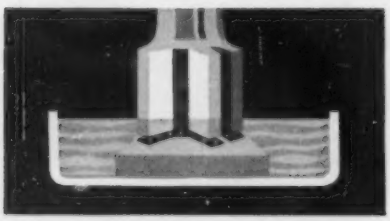
On your wrist you can now wear an electronic timepiece whose precision approaches that of the world's time-standard observatories. Using electronic ideas developed for satellite instruments, it's powered by a Mallory Mercury Battery . . . smaller than a dime, yet capable of lasting a year or more.

MALLORY imagination at work in electronics and metallurgy



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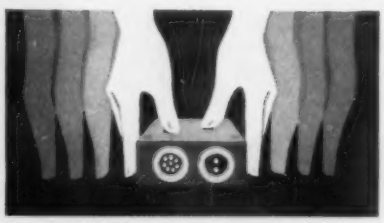

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MALLORY

American Industry's Capital Spending Overseas: 1960-1962
(in millions of dollars)

	CANADA			LATIN AMERICA			EEC EUROPE		
	Actual	Planned		Actual	Planned		Actual	Planned	
INDUSTRY	1960	1961	1962	1960	1961	1962	1960	1961	1962
Primary Metals	$9	$13	$8	$51	$62	$81	$23	$18	$11
Machinery	9	14	14	16	19	23	67	66	75
Electrical Machinery	36	56	65	15	40	31	30	27	12
Transport Equipment, including Autos	27	22	21	34	43	47	144	250	230
Other Metalworking	3	3	3	5	5	6	16	16	19
Chemicals	74	41	35	33	77	69	47	66	67
Paper	72	65	59	2	0	3	0	0	3
Rubber	26	15	26	10	8	9	8	29	12
Stone, Clay & Glass	26	20	15	4	3	6	3	9	24
Food & Beverages	35	36	30	16	10	3	14	5	18
Misc. Manufacturing, including Textiles	67	65	13	21	2	13	6	30	68
ALL MANUFACTURING	384	350	289	207	269	291	358	516	539
Petroleum Industry	360	370	329	340	475	409	151	187	200

	UK, OTHER EUROPE			REST OF THE WORLD			WORLD TOTAL			
	Actual	Planned		Actual	Planned		Actual	Planned	Planned	% Change
INDUSTRY	1960	1961	1962	1960	1961	1962	1960	1961	1962	1961-62
Primary Metals	$14	$4	$4	$4	$6	$4	$101	$103	$108	5%
Machinery	24	48	41	16	26	25	132	173	178	3
Electrical Machinery	23	11	10	0	0	0	104	134	118	−12
Transport Equipment, including Autos	91	180	156	40	49	68	336	544	522	−4
Other Metalworking	7	12	11	11	4	5	42	40	44	10
Chemicals	45	33	43	38	58	75	237	275	289	5
Paper	3	6	3	1	1	1	78	72	69	−4
Rubber	4	5	10	20	16	23	68	73	80	10
Stone, Clay & Glass	3	7	1	1	5	2	37	44	48	10
Food & Beverages	26	52	41	6	5	8	97	108	100	−7
Misc. Manufacturing, including Textiles	10	2	1	1	1	0	105	100	95	−5
ALL MANUFACTURING	250	360	321	138	171	211	1,337	1,666	1,651	−1
Petroleum Industry	194	214	229	422	514	470	1,467	1,760	1,637	−7

U.S. Business Abroad Keeps Growing

THE PARADE of American industrialists overseas continues, and more marchers have joined the column—all carrying with them expectations of rising sales.

This is the story behind the statistics above, taken from the new McGraw-Hill study of U.S. businessmen's plans for capital spending overseas. Both McGraw-Hill and the U.S. government report that spending abroad this year is up a resounding 20% to 22%. And both suggest that investment in 1962 will be maintained at this year's high level.

• **Decline?**—But it is significant that for the first time, the McGraw-Hill survey shows a decline in anticipated spending for the year to come. The decline is minimal—1% in the manufacturing sector, 7% in petroleum. The oil surplus may explain the latter's decline. In manufacturing, American industry may well place a higher priority on domestic capital plant next year. Preliminary soundings hint that after two years of lag, 1962 may be a big spending year at home.

Yet Western Europe keeps attracting a growing share of U.S. capital spending. It is up 44% this year in the Common Market Six, and another increase is projected for 1962. A similar rise is recorded for Britain and the rest of Europe this year, though there

is a suggestion of a slowing-down in 1962. It may be that businessmen are watching to see how Britain's bid to join the EEC fares.

Latin America, showing an important increase, is a surprise to some—considering the instability there and the cessation of all investment in Cuba. This may be partly the result of expanding markets (and the stimulus of the "Alliance for Progress"), partly because many companies fear exclusion from markets unless they begin local manufacture.

The survey contains other revelations about Yankee businessmen:

Expansion versus modernization: The ratio of manufacturers' spending for new capacity to spending for replacement and modernization of existing capacity has remained virtually constant at about 40 to 60 over the 1960-1962 period. But the ratios vary by area. In Canada, only 16% will go for new capacity next year, a sharp drop. But in the EEC, the proportion for expansion keeps creeping up—from 42% in 1960 to 48% next year. In Latin America, both the manufacturing and the petroleum industry will spend a bit more on new capacity.

Equipment from home: Manufacturers will be buying more of the machinery for their overseas plants in the U.S.A. In 1960 they spent about $276.4-million on made-in-U.S. supplies; this year about $300-million; next year they say it will be $351.6-million.

Profit remittance: The respondents to the survey expect to send 43% of the profits from overseas operations home in 1962, compared to 42% this year. That percentage might take a sharp jump when—and if—President Kennedy's plans to tax unremitted overseas profits are adopted.

Answers to the final questions on the survey go a long way to explain the continuing build-up of U.S. industry's overseas investments. Businessmen report that while they expect their commercial export sales to rise 3% next year, they expect sales of overseas plants and affiliates to rise 10%.

A complete report on the McGraw-Hill overseas capital spending survey will be available soon in brochure form. Write to the Editors, International Management, for information.

Business Education Gains

There are now more than 60 graduate programs, and some 120 executive development programs. Yet many businessmen remain skeptical of management education.

"WE SEEM NOW to be at the end of what might be called the first phase —an experimental one—of the development of European management education." Roger Gregoire of the European Productivity Agency made this comment after completion of the first survey of management courses in Europe.

The big news of the moment is that the EPA has appropriated funds for a study of where management education should go from here. A preliminary report is expected early next year.

This autumn Western Europe will have more than 60 postgraduate university programs in business management. And there will be some 120 programs of executive development, lasting from a few weeks to nine months.

With only few exceptions, management training is taking place at "institutes" or "centers" that are attached to the universities but not part of their regular faculties.

In sacrificing prestige and degrees, however, business educators have been able to introduce their unorthodox teaching methods. They make heavy use of case studies of business problems, films and discussion groups, study projects. And new techniques continue to be tried: An Irish institute recently introduced the "Press Conference"—an expert stands in front of a group and tries to answer their "probing" questions about how a company has been managed.

• **French Program** — When the history of management education in Europe is written, one of the memorable dates is likely to be July 28, 1955. On that day, the French government decreed that French universities should set up management education centers. As a result, some 20 universities now give the "Certificat d'Aptitude a l'Administration des Entreprises."

This month, several hundred graduates with law, arts or science degrees begin the eight months of study leading to a Certificat. At Lille, Caen, Grenoble, Dijon, and the other universities, the students will devote 24 classroom hours to each of eight subjects: social psychology applied to the firm, industrial relations, general management, production marketing, financial management, general accounting, cost accounting.

Also, arts or science graduates will devote an additional 40 hours to the legal problems of business and 40 hours to basic economic problems. In the evenings and on weekends, the French management centers put on courses for older men—at least 25 years old, with two years' business experience.

France's standardized program is of interest because there is a movement — through an organization called Eurogestion (Organization of Management Schools)—to develop a common program of management education.

While the Certificat program is still weak, and is largely ignored by the academic world, France appears to be on the right track. Two U.S. reports last year suggest the best education for a career in top management is a liberal arts education—followed by two years of business study.

Not to be overlooked is the first "pan-European" business school at Fontainebleau, now in its second year. According to one knowledgeable educator, Fontainebleau is "not yet a first-rate business school, but it is an interesting experiment in international business living."

• **Prestige**—In terms of international prestige, Britain's Administrative Staff College at Henley is the closest European rival of Harvard University's Advanced Management Program (which, incidentally, accepted women this fall for the first time). Britain also is receiving special recognition for introducing management courses into its technical colleges—a reform that is badly needed on the Continent, according to some educators, to provide a badly needed source

in Europe

of lower and middle management.

All in all, there is a wide choice of training facilities in Europe for students or companies to choose from. Some of the best institutes are supported by private companies. These include the "IMEDE" institute at Lausanne, sponsored by Nestle; Centre d'Etudes Industrielles at Geneva, sponsored by Aluminium Ltd.; the "IPSOA" institute at Turin, sponsored by Olivetti, Fiat, and Unione Industriale. All three depend heavily on U. S. business professors, and proficiency in English is either required or highly desirable.

• **Skepticism** — Professor Paul Haenni, who heads the Centre d'Etudes at Geneva, has remarked there is still deep skepticism in Europe as to the value of management development programs.

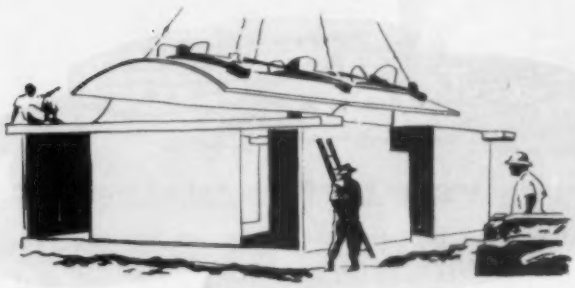
The European businessman places much emphasis on practical experience, Haenni says. He still insists on solving his own problems in his own way; and he suspects that management training produces "theoretical" executives who would "intellectualize" problems.

On the other hand, there are forces working in favor of management development. The increasing complexity of business, the need for broadly educated managers and for more managers, the growing awareness that management is a scarce resource — these will eventually force the acceptance of management training, in Haenni's opinion.

• **Seminars** — It is hard fact, nonetheless, that many companies lack the manpower or the flexibility to release a man from his job for a relatively long period of time. This roadblock accounts for the appeal to management of short, specialized seminars.

Brussels' "Management Center-Europe" (sponsored by the American Management Association) opened last month; on hand were businessmen of 13 nations. Appropriately enough, the first of 10 seminars scheduled for this fall was on management development. But the highlight of the current "season" is likely to be the seminar for chief executives—by invitation only —taking place October 25-28. ●

HOME-BUILDING IN LATIN AMERICA:
a sampling of techniques



Emergency housing—precast shell homes, about $1000—in Puerto Rico . . .

Housing: Opportunities Loom in Latin America

EVERY NATION in the world needs more housing. And the 20 republics of Latin America are no exception: To supply even minimal housing for its burgeoning population, it would need 10-million more homes immediately.

Housing is high on the priority list of the Alliance for Progress, the economic development plan linking United States financial assistance with Latin America's own self-help efforts. The challenge is immense: Millions of persons are homeless, or living in the rudest hovels; there is a lack of capital, materials, and experience; government restrictions, inertia, and corruption often limit progress.

Yet the opportunity is staggering. One businessman with long experience in Latin America put it this way:

"A giant new industry will emerge. . . . With the collateral industries it creates, housing can become a major factor in industrializing Latin America."

One of the factors in the "giant new industry" may well be the international home builder, bringing building and financing methods from overseas. Already, some builders and financiers in North America and in Europe are working in Latin America in partnership with local contractors. And more will be attracted as the Alliance for Progress starts gaining speed.

I. Alliance for Progress

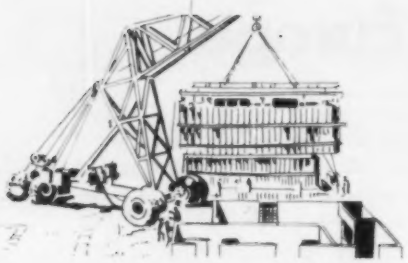
During the next ten years, a large though unspecified amount of the $20,000-million in foreign funds sought for Latin America is to be invested in low-income housing. It will come from the U. S. government and, hopefully, U. S. private investors (page 19); from the Inter-American Development Bank, the World Bank, and other international institutions; and from other governments and businessmen throughout the world.

• **IADB**—The staggering sums of foreign money for housing—$100-million was promised by the U.S.A. before the conference had ended in August—will be administered by the Inter-American Development Bank.

Stanley Baruch, housing consultant of the Bank, explained to INTERNATIONAL MANAGEMENT how the major part of the loans would work.

One plan involves self-help housing aid in which loans will be made directly by the government to the prospective home-owner. Construction will be done by the owner, aided by technicians. The amount of work the owner does will depend on his abilities and inventiveness. Some may put up only the foundation and walls. Others might work

HOME-BUILDING begins on p 21



. . . a Venezuelan employer helps finance worker's homes . . . Puerto Rican poured-concrete method in Chile . . .

on the whole house, including the plumbing and electrical wiring.

The second plan depends on aid to savings and loan associations. These associations have already been encouraged in various countries (Peru, Ecuador, Chile) by the U.S. government's Development Loan Fund.

Now, long-term loans will continue to be made under the administration of the Inter-American Development Bank. The money will be lent to the government central banks; these institutions will, in turn, reloan the money to private savings and loan associations. Colombia, Argentina, and Venezuela have already been designated for such long-term loans.

• **Private**—In all cases, homes will be privately owned, not rented. Mr. Baruch believes that the availability of long-term housing credit will provide an incentive for greater development of private home building in each of the countries.

Indeed, lack of credit has been the major deterrent to large-scale home building. All of the Latin American countries have banking institutions which make housing loans, but the terms can hardly be called liberal. Only 40% to 60% of the cost of the home is lent, at a very high rate of interest (20% is not uncommon), and it may be due and payable within five years.

Capital for longer term loans has been scarce because investment in savings institutions has been limited. Wary of the depreciating currencies, Latin Americans have preferred to put their money into idle land where they believe it is more secure, or into speculative luxury buildings for a quick resale, or—too often the case—into Zurich or New York bank accounts.

Officials at IADB hope that a combination of more liberal government loans, reasonable credit, private enterprise, and technical innovation may be a formula for a more successful attack on housing problems.

II. Builders at Work

Extensive construction is now going on in many areas of Latin America, some of it with the aid of foreign builders—especially North Americans—whose methods and organization can occasionally assist Latin American builders searching for more efficient techniques. Here are some examples:

In Guatemala: A 5,200-unit project is underway, started by a North American, William F. Luce. The project will consist of 1,300 concrete-block structures, each containing four units. The units are going up at a rate of twelve a day, and include two bedrooms, a bath, and a kitchen-dining area.

Each unit costs $640 or less, and the owners—mostly at the level of government workers, teachers, shop supervisors — make small monthly payments for as long as 36 months.

In Venezuela: Local private firms are helping to solve urgent housing problems. A non-profit organization called the Workers' Housing Foundation has been formed with the support of the government, and financial help of businessmen.

With a capital of about $4-million, the Foundation finished one project of 226 homes and is building another of 840 homes, which will include all public services—sewerage, roads, electricity.

The Development Loan Fund last year granted $5-million to help the Foundation expand. Now it builds 700 $4,000 to $7,000 homes a year.

In Argentina: The government recently called for international bids for 17,500 housing units to be built in and around Buenos Aires at an estimated cost of $125-million, to be completed in five years.

In Colombia: The Institute of Territorial Credit recently announced plans to build 50,000 low-cost homes during the next two years at a cost of $50-million. About half of this money will come from the Inter-American Development Bank, half from the Colombian government.

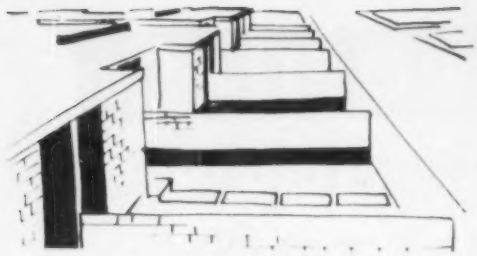
In Mexico: Whole cities are being built. Near Veracruz, a workers' city for 10,000 people at a cost of about $10-million is jointly sponsored by government and the sugar industry which employs many of the workers. Another "satellite city" which will house 15,000 is now in the planning stage. And in Mexico city, a new suburb is being built consisting of 7,500 homes.

One of the most ambitious programs in Latin America is in Chile (IM—Sept, p2). Here, approximately $1,600-million is to be spent by 1970 to build 550,000 low-cost homes.

III. Builders from Abroad

One of the companies now operating in Puerto Rico, Chile, and Peru is the IBEC Housing Corp. of the U.S.A., an affiliate of the Rockefeller-sponsored International Basic Economy Corp. The core of this company's operations has been in Puerto Rico, where, with the aid of U.S. government-guaranteed financing, it has built some 6,700 houses valued at $49-million for middle income families. Prices of the houses range from $8,000 and $9,000—high for Latin America, but something many middle income families in Puerto Rico can now afford.

• **Technique**—IBEC uses two methods to mass produce houses, four to six each day at a single site. One technique uses a giant steel form placed on a slab floor



. . . a U. S. builder's $3500 homes in Peru . . . and joint government-industry apartments in Mexico.

by a mobile crane (drawing above). Concrete is poured into the form and the next day, the form is moved to another floor. A roof slab of concrete is placed on the walls by the same crane.

IBEC also uses a precast panel method by which the components of a house are cast at centrally-located casting beds, loaded on trailers, and moved to the site.

• **Farther South**—IBEC is trying to spread these techniques to other parts of Latin America. In Chile, IBEC works closely with a contractor who uses IBEC methods exclusively. A Puerto Rican building firm which worked with IBEC and adapted its techniques has been successful in Jamaica.

In Peru, IBEC has just started building a 700-home project using standard building methods. Although IBEC had hoped to build $1,500 homes, the soaring price of land—$8,000 to $10,000 per acre—and government building restrictions have pushed the price of the homes up to about $3,500 each.

• **Financing**—But the major problem here, as everywhere, is financing. U. S. government-guaranteed loans made the Puerto Rican operation "as easy as shooting fish in a barrel," according to one of IBEC's competitors. Such is not yet the case in Peru.

Because there are relatively few financing institutions which offer mortgages at reasonable rates, IBEC as well as all other builders in Latin America is looking hopefully to the aid for savings and loan associations which the Alliance for Progress will provide.

In any case, IBEC officials are highly confident of building opportunities for the foreign builder in Latin America.

• **New Venture**—The American International Housing Corp. is an example of a brand-new organization entering the field after closely watching the progress of other builders in Latin America. Norman P. Mason, chairman of the company and former U. S. Housing Administrator in the Eisenhower government, told INTERNATIONAL MANAGEMENT that while the Alliance for Progress is highly encouraging to Latin American builders, it cannot produce results overnight. He would like to see an effective insurance program to guarantee investments of the foreign builder. This, he says, would go a long way to stimulating immediate building activity by foreigners in Latin America. Mason notes that Argentina, in particular, offers interesting building possibilities.

Mason's firm in aiming at the very low-cost ($1,000 to $1,500) homes, and claims it will "build 500 homes at a crack." This will be done on a joint venture basis, with 50% of all American International Housing operations owned and managed by local people.

• **No Experience**—Another international home builder complained to INTERNATIONAL MANAGEMENT that Peru is "50 years behind in building and financing techniques." Mr. Lloyd Baird, executive vice-president of World Homes Inc., said that Peruvians have no experience with guaranteed loans. Commitments to builders by saving and loan associations were virtually unheard-of until recently. And antiquated legal procedures create a tangled mess of red tape: More than 30 people are required by law to process one warranty deed.

Despite such problems, World Homes (its slogan: "Every man a homeowner") has successfully built 72 two-bedroom homes and is now building another 500-home project, financed by one of the few savings and loan associations which received "seed capital" from the Development Loan Fund. High costs for land, and materials, however, are keeping the price of homes up. Like IBEC homes in Peru, they cost about $3500.

• **Cooperative**—Mr. Baird states that cooperative development throughout Latin America is growing rapidly, not only in Peru (there are 40 in Lima alone) but in Chile, Colombia, and Argentina, among other countries. His company has planned a cooperative development for 500 people. Units will cost from $1100 to $3100. Here is how it will operate:

Members of the cooperative buy a tract of land, and then develop it by adding roads, sewerage systems, electricity, etc. Then, under contract with World Homes, the units are built and financed by a savings and loan association. Only local labor and materials are used.

• **Other areas**—World Homes and IBEC are exporting their Latin American building experience to other areas.

World Homes is actively exploring building possibilities in Iran, Pakistan, and Lebanon as well as in India where it has recently built its first model home. With the aid of funds from the U. S. Export-Import Bank, World Homes intends to start a 500 home-project in New Delhi soon. (The firm found that homes in India—of only a basic shell—can be sold for $300 to $400.)

IBEC has already completed two projects in Teheran—one of 115 units for the workers of the National Iranian Oil Company, and another 220-home development for the Bank of Omran.

Commenting on the opportunities for private enterprise in the Middle East, an IBEC man says that "governments are welcoming the foreign builder, whether his project is for just a few houses, or for total community development."

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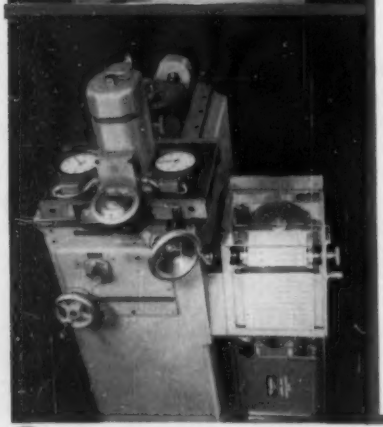

The New Red Ring Involute Checker was developed primarily to inspect gear shaving cutters for which maximum precision is imperative. It utilizes the base circle technique but with major design modifications and added refinements to increase accuracy, improve dependability and facilitate handling.

PRINCIPAL FEATURES

- **Two dial indicators (.0002″ graduations) are provided, one for each side of the tooth being checked.**
- **With opposed indicators, instrument set-up is quickly verified by checking the work with one, reversing it and making a comparative check at the same point with the other.**
- **A protractor on the contact finger holder assures proper helix setting. This is pivoted to swing through 180° in order to check both sides of the tooth without angular adjustment.**
- **Work is mounted on ball bushings to minimize the effect of eccentricity.**
- **A self-disengaging spindle lock secures spindle while base circle disc is being mounted.**
- **Indicating slide is mounted on rollers to avoid brinelling or grooving the ways.**
- **Indicating slide is driven by a self-locking gear mechanism to prevent the slide from running free.**
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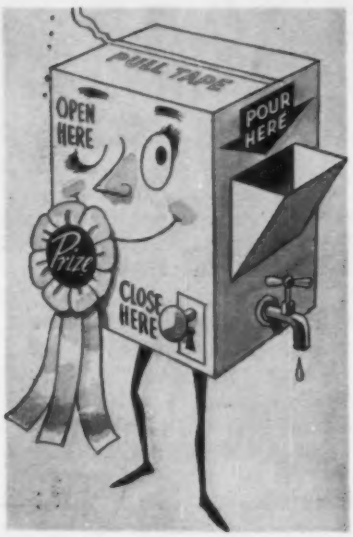

Packages with tabs, spouts

. . . that can be reused

. . . that fit pantry shelves.

How Consumers View Packaging

HOUSEWIVES have definite opinions about most things they use, and product packages are no exception. According to Market Facts, Inc., a Chicago survey-research firm, they want food packages that are easy to open, reusable, easily stored on pantry shelves, decorated in bright colors to show how the food would appear on the table, and carrying information on the label that is legible, understandable, and honest.

• **Growing Concern** — Market Facts made its consumer survey for Chicago Printed String Co., a company with a big stake in the packaging field. Packaging, of course, takes on greater importance for all consumer-goods companies with the spread of self-service retail shops—where goods must sell themselves.

It has been observed that European packages are superior in construction, whereas American packages are superior in selling ability. But there is mounting evidence that U. S. packages have not won the wholehearted approval of the consumer.

Congressional hearings on deceptive labeling practices are scheduled for this fall, and food packagers will be called on to answer charges that, among other things, contents often do not fill the package, and that such phrases as "giant half-pound" and "jumbo size" are misleading or meaningless.

Not wanting to stand idly by, Chicago Printed String Co. commissioned Market Facts to find out how broad the displeasure is. Some of the survey results support the critics of packaging. A good many consumers feel that the breakfast-cereal companies, for instance, should make their boxes just big enough to hold the cereal. And many consumers want more conspicuous printing of net contents, less advertising on the label, and more honest labeling in general.

• **Role of Package** — Probing deeper into the role of packaging, Market Facts found that housewives usually pay only minor attention to packaging in deciding what product brand to buy. Of the five top influences in buying decisions, packaging is outranked by the shopper's experience, recommendations of friends, price, advertising.

Packaging takes on greater importance when it comes to choosing between very similar products; 63% of the shoppers said packaging carries some weight in this case.

Market Facts says that American women have come to expect manufacturers to keep coming out with new packages. They no longer respond to the word "new" on a label. But they tend to associate a design change with an improved product or progressive company.

A large majority of the consumers admitted to buying products because of premiums and coupons. But a strong minority resent the practice: Some housewives do not like to send away for premiums; they are unhappy when premiums they do not want come with the package; they really get angry when premium offers on packages are aimed at attracting children.

• **Conveniences**—Many consumers said they would be willing to pay slightly extra—perhaps 5%—for conveniences such as plastic containers that can be used again, spouts and pull-tabs. On the other hand, nearly half the people interviewed thought that U.S. products are already "overpackaged."

Of the consumers who complained about inconveniences, 85% told of having been hurt in one way or another in opening a package. Mostly, injuries stemmed from having to use a tool. Women were especially bitter about having to use a knife to get into packages of frozen strawberries. Of sugar and flour sacks, one women commented, "They are stronger than I am." *(Business Week, Aug. 12, p 106)*

A memo to marketing management on what makes a salesman successful, on the role of salesmanship, on . . .

Doing a Better Job of Selling

AFTER A SURVEY of 1,500 companies, a London sales consultant named Anthony Jeffries concluded that British salesmen "are untrained, inefficient and badly organized." Furthermore, most British salesmen seem ashamed of their jobs. "With a few exceptions," Jeffries comments, "British salesmen are among the worst in the world."

A harsh judgment — perhaps merited, perhaps not. At least British companies recognize sales as a profession, and their salesmen are probably no worse than salesmen on the European continent or elsewhere in the world. A good many North American salesmen are just as unorganized and inefficient.

But that selling has a questionable image is shown by surveys of university students in the U.S.A. The students have rated sales very low on the scale of desirable careers —and this in a country where salesmanship is called a "way of life."

I. Why a Salesman?

Instead of bewailing the poor image of salesmanship, a better approach for management is to ask: "What makes for a good salesman —and why does he become a salesman in the first place?"

Very few companies have tried to answer this question. One of the few is the U.S.A.'s Service Bureau Corp., an affiliate of the International Business Machines Corp., which operates data-processing service centers. The company employs 2,000 salesmen.

Herbert R. Keith, President of Service Bureau, recently described his effort to discover what personal factors separated the most-successful from the least-successful salesmen. The occasion was the First International Seminar on Marketing Management, sponsored by the European Productivity Agency and held at the U.S.A.'s Indiana University School of Business. The seminar brought together 20 top marketing executives from Europe and 14 from North America.

Keith said his company selected 200 salesmen at random for interviewing. Company records suggested that these men had little reason to feel ashamed about their jobs: The typical salesman was 30 years old, had been "on quota" with the company for less than three years in 1959.

• **Success Factors**—These salesmen were interviewed by a company sales executive who focused on job factors, and by a psychologist who focused on personal background and motivations.

In general, Keith reported, the most successful salesmen were men who had made their own decisions in life—about what school to attend, what course of study to follow, what career to pursue. Self-determination and leadership qualities thus appeared to be important for sales success. These characteristics seemed to be lacking in salesmen not judged successful.

One of the greatest motivating factors in selling, the study suggested, is a desire for early recognition in life. This is a trait often noticed by sales managers, but most companies tend to consider it a drawback. As one marketing man recently complained to *Sales Management* magazine: "Few young men interested in selling as a career appear to have a realistic conception of what it takes to succeed—and how long. They expect advancement without commensurate work effort."

Instead of lamenting the fact, the Service Bureau is now trying to harness the young man's ambitions. It is revising its recruiting methods; restudying its compensation plan; emphasizing more specialization within the sales staff. As Keith puts it, the company is "carving out more-distinct career paths for sales personnel."

Keith is still pondering the psychologist's observation that family background has a close relationship to sales success. The most successful salesmen came from families where the father was dominant, and where the need for success was emphasized. Many of the less successful salesmen came from "closely knit families where love, peace, and harmony existed in the family group."

• **Leaders**—It may be, of course, that the Service Bureau turned up traits that would lead to success in many fields, and not just in selling.

Support for this view comes from a study of salesmen by a U.S. business consultant, Eugene Benge.

The biggest differences between excellent and poor salesmen, Benge found, were in their self-confidence and planning ability, while the smallest difference was in their level of social development.

The best explanation of why surveys such as Jeffries' in Britain turn out as they do: Not enough leaders are attracted into selling.

II. Defining Terms

The marketing executives at the Indiana seminar paid close attention to the importance of defining what is meant by selling, advertising, publicity, and sales promotion. Accurate definitions make possible comparisons between selling and other sales efforts, and make possible the budgeting and control of expenses.

Here are brief definitions of four key marketing words, as they are used in the U.S.A.:

Personal selling—the efforts of salesmen.

Advertising—visual and oral messages disseminated through various media which are paid for providing the service.

Sales promotion—materials and techniques that supplement advertising and personal selling. This includes direct mail, catalogs, house magazines, trade shows, sales contests, samples, window displays.

Publicity—it differs from advertising in that media are not paid to present the material, and they use it at their own discretion. The message is not always identified with its source.

Albert Frey, President-elect of the American Marketing Associa-

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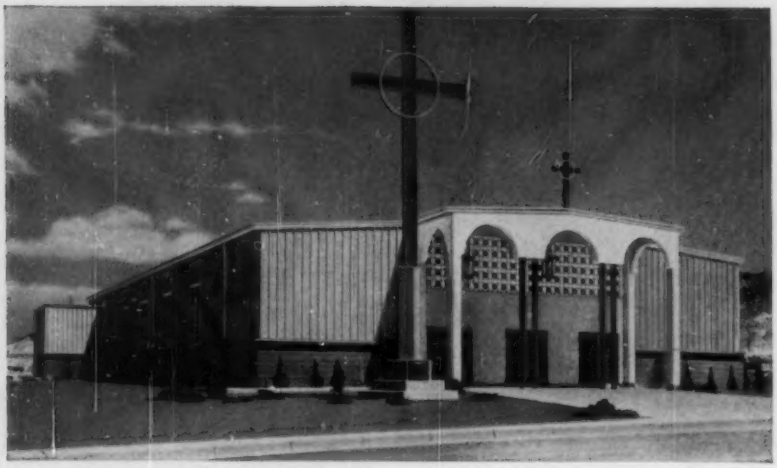

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tion, put it this way at Indiana: "Personal selling tends to move the product through the distribution channel toward the consumer; advertising tends to move the consumer toward the product; and sales promotion and publicity facilitate both these activities."

III. Role of Selling

The amount of emphasis given to each of these marketing tools depends on how people buy and why they buy a product. According to A. N. Seares, another seminar speaker, regular buying habits develop naturally for an essential product like bread. And in some cases, management may want to try and stimulate such regular buying habits for nonessential products—the selling job is made much easier if it can be done.

For a great many products, however, the customer must be educated as to his need for the product. This is where what Seares calls "creative selling" comes in.

The salesman must be able to relate the product he is selling to the needs of his customer. He must know what sales appeals to use, what benefits the customer will derive from the product, and how the product will satisfy the customer's motivation in buying it. Learning these things is the essence of sales training; a prime objective of sales meetings is for salesmen to exchange successful techniques.

• **Current Problems**—The Indiana seminar did not get into what management is doing about the pressing problems of the moment. Information on this comes from a survey by the U.S.A.'s National Industrial Conference Board. American managers are currently worried about price competition and the resulting profit squeeze. They are responding to this challenge by . . .

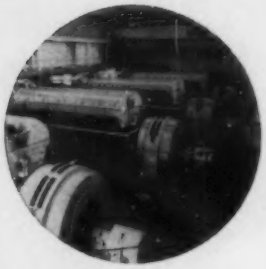
. . . increasing the frequency of salesmen's calls on customers.

. . . seeking new markets and new products in fields where price competition is not so fierce.

. . . weeding out small accounts where service costs are excessive.

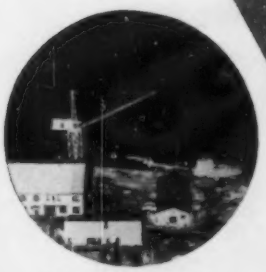
. . . passing up large-volume, narrow-margin sales that reduce profitability; and eliminating low-volume, marginal items.

. . . reducing manufacturing costs wherever possible to get a larger profit at low prices. ●



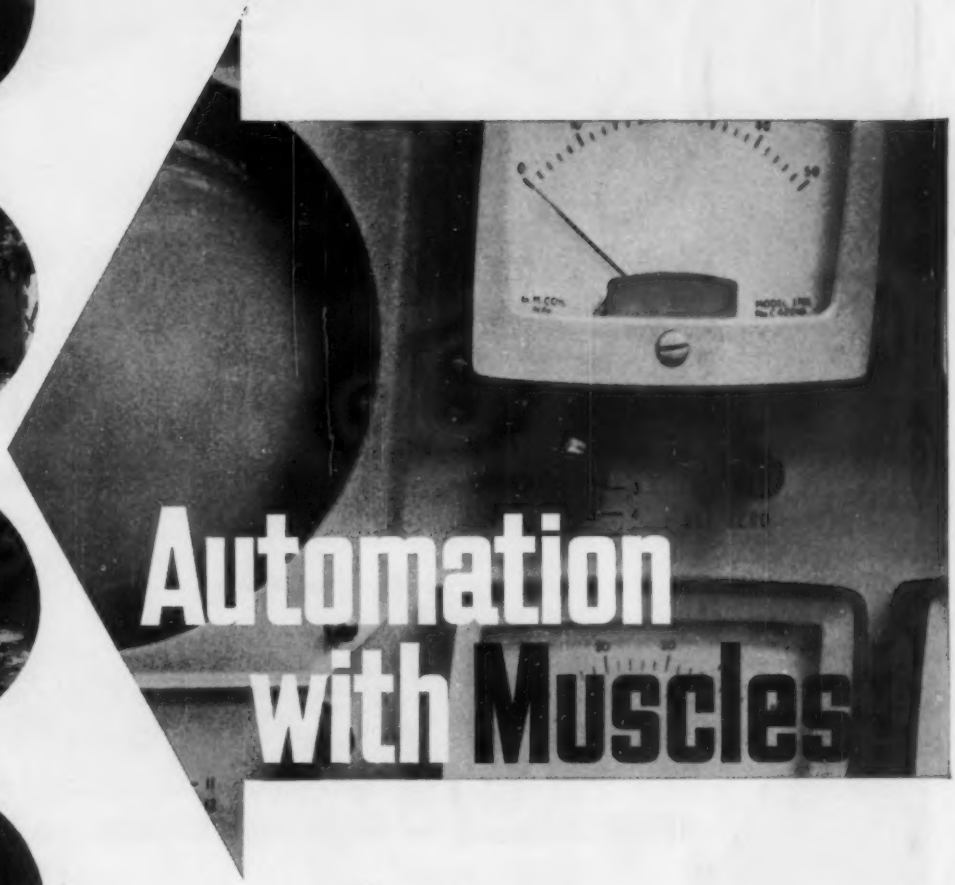
Power Stations

Electrification



Harbour Installations

Sewage Plant



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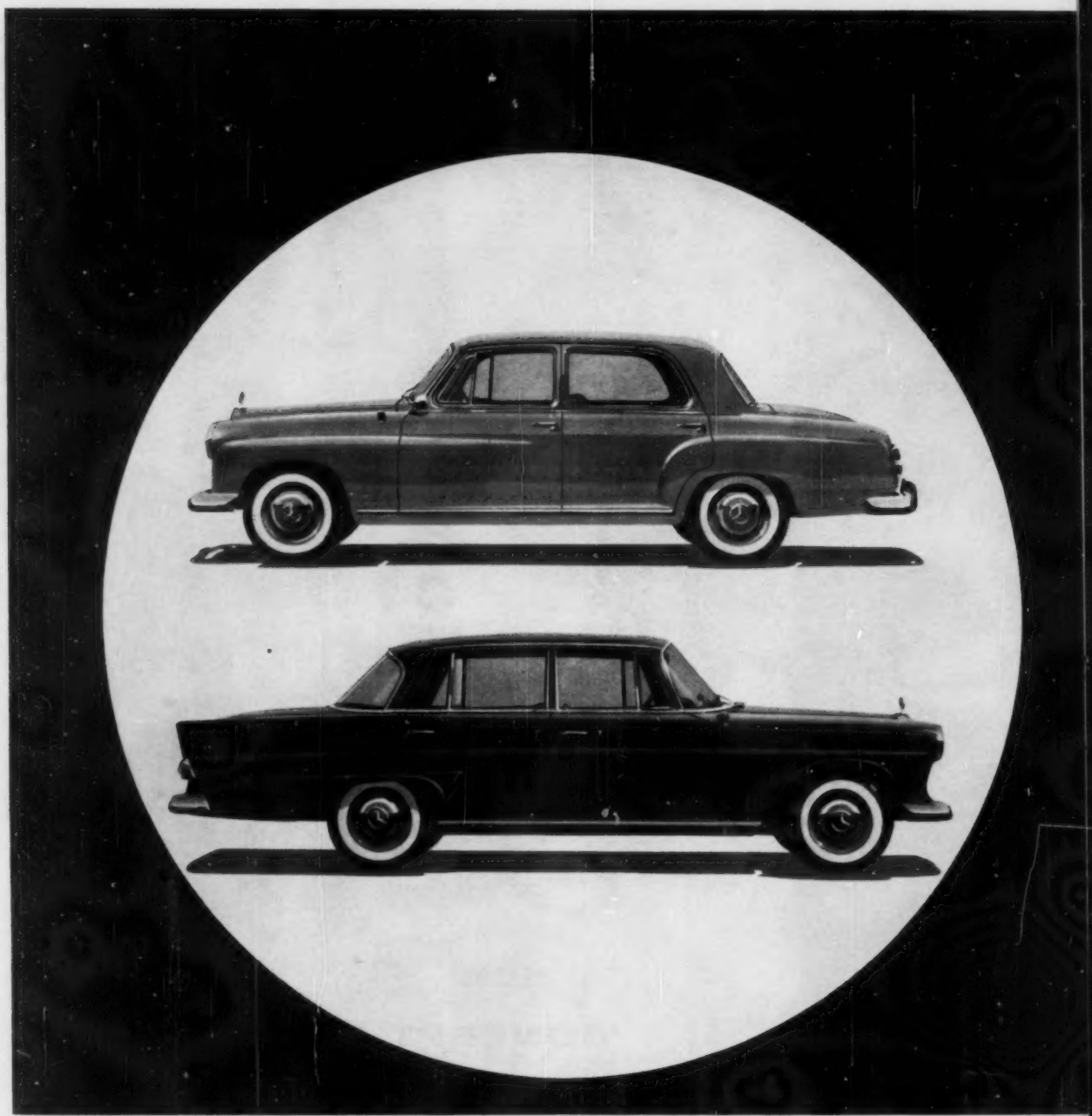

Another big step forward. True to their tradition, Daimler-Benz AG continue to work in the spirit of their great founders, Gottlieb Daimler and Karl Benz, whose striving for progress was crowned with such epoch making success three-quarters of a century ago. Out of this tradition of pioneering technical progress have come the improved and the new cars with that symbol of quality, the three pointed star. The Mercedes-Benz 180 D, proved in all parts of the world, is now equipped with a 52 HP Diesel engine. The completely new 190 and 190 D have become still roomier and safer and incorporate many design features of the successful 220 models. The 190 D also has a more powerful Diesel

engine, of 60 HP. Of the new, distinguished and technically quite outstanding Mercedes-Benz 300 SE just a few facts, which speak for themselves: Light alloy six cylinder injection engine of 185 HP, Daimler-Benz automatic transmission, air suspension, Daimler-Benz power steering, servo disc brakes on all four wheels. Finally the new, sleek, elegant 220 SE Cabriolet makes its debut. In its select appointment and technical perfection it equals the coupé which has already found many friends and admirers. These new cars prove once again that Daimler-Benz AG always strive to offer only the very best that can be produced with the technical resources of our time.

75 YEARS OF AUTOMOTIVE ENGINEERING 1886-1961

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147 AJ

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FOAM in waste water is only one of the gummy problems created by the housewives' love for detergents.

Trouble for Detergent Makers

LITTLE did they know, the chemists, industrialists, marketing men, and housewives, that when synthetic detergents swept into the market dominated by soap they would bring technological trouble with them. The detergents began their assault 20 years ago. Now they have created a problem of alarming proportions in many nations.

The trouble: Most synthetic detergents (the trade calls them "syndets") depend on alkyl-benzene sulfonate—ABS—as a crucial component. But ABS is virtually indestructible by normal water and sewage treatment: "Bacteria and ABS are hopelessly indifferent to one another," says a sanitary engineer.

The result: Millions of tons of detergents, waste from milady's washing machine and industry's factories, are fouling water systems.

Four major interests are involved in the problem, reports *Chemical Week*. They are: (1) the detergents manufacturers, whose world wide business amounts to well over $1,000-million yearly; (2) chemical firms who supply the syndet makers with raw materials; (3) water, sewage, and health authorities; (4) the cost-conscious consumer.

• **Costly Nuisance**—No one as yet has produced any evidence to show that ABS actually is toxic. But it is a nuisance. Sewage engineers don't want their plants clogged up with hard-to-dispose foam. Nor do consumers want a clouded water supply.

Growing concern has led to a three-pronged international attack on the problem. It is aimed at developing (1) detergents that can be more readily treated, (2) sewage-treatment systems that will be more effective on the old syndets, and (3) government regulations that will control—and, in Germany, perhaps even prohibit—the use of ABS-type detergents.

I. Better Detergents

Detergents that are more biologically degradable than ABS are available now, but they are costly. Current research therefore is aimed at developing better syndets—and improved water-treatment processes—with no increase in cost to the consumer.

U.S.A.'s Continental Oil Co. believes that it can provide such an improved low-cost detergent by sulfating Ziegler-type fatty alcohols. It plans to assign to syndets part of the output of a new alcohol plant in Louisiana, and it has been discussing with Germany's Deutsche Erdoel AG a proposed larger works near Hamburg. At least one U.S. detergent maker, however, doubts whether alcohol can produce as cheap or good a cleanser as ABS.

• **Soft ABS**—Shell Chemical International Co. Ltd. (London) has been approaching the problem from another direction. It has developed a "soft" type ABS derived from cracked wax olefins. Detergents made from the material are being tested at Luton, England, where a low water supply has increased ABS-caused clouding.

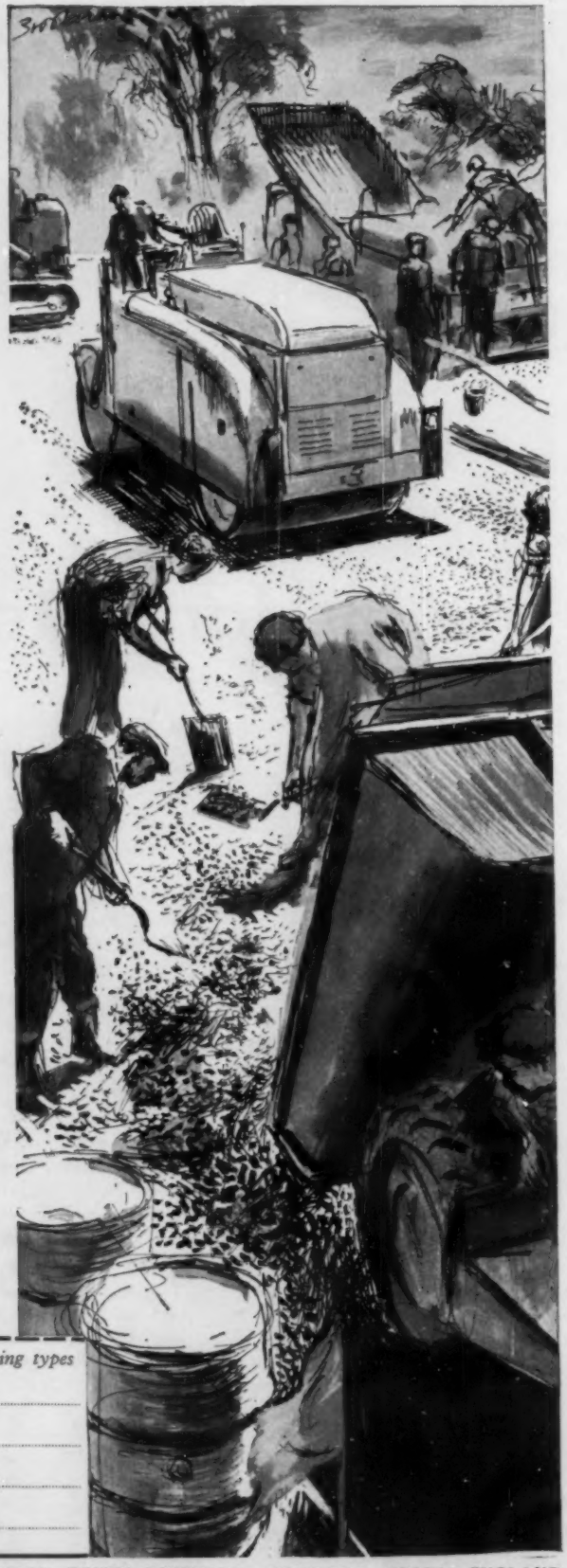
Preliminary results of three years of testing show a substantial decrease in foam. The new syndets are biologically degraded about one-third more than conventional ABS products, but not as much as hoped for. Evaluation of the tests, however, has suffered from the inability to keep out other detergents from the sewer lines.

Stepan Chemical Co., U.S.A., has been doing pilot-plant studies of still another biodegradable detergent. Stepan officials identify it only as "tallow-based and hence containing both saturated and unsaturated components." The company says that on a large scale basis its product could sell for about 33-44¢ a kilo, about 50% more than ABS.

Most other new compounds are petroleum-based. In most areas of the world, such ABS substitutes would prove too costly.

• **Removal**—A certain proportion of ABS can be removed by fairly sophisticated operations at

A ROAD GANG'S BEST FRIEND IS A **FORD** ENGINE



Road-building equipment powered by a Ford Industrial engine starts with two major advantages—the heart of it is a tough, hard-working, reliable power-unit built to the most modern designs, and behind it is the famous Ford Service Organisation—a world-wide chain of factory-trained engineers with a stock of genuine Ford parts.

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present sewage plants. Improvements along this line are planned for a number of U.S. plants, wherever the problem is acute.

To aid the ordinary U. S. sewage plant, Chemical Process Co. has developed an ion exchange system that removes 99% of ABS from waste water. After adsorption on a chloride-containing resin, the ABS is washed out with a mixture of mineral acid and a polar solvent.

ABS concentrations of 30 ppm and more often are found in laundry effluent. Another U. S. firm, Pfaudler Permutit Inc., soon will begin testing a new water treatment system for handling such difficult conditions.

• **Atomic Methods**—Even radiation techniques are being put to work at ABS removal. Radiation Applications Inc., under a contract with the U.S. Public Health Service, has been using some of the skills it developed in separating radioactive metals to break down water contaminants. In a batch foam column, ABS content was reduced from 3-5 ppm to 0.2-0.5 ppm.

II. Government Action

Both chemists and sanitary engineers hope that technical advances will move fast enough to ward off any drastic government steps against ABS. But developments would have to come fast.

In West Germany, a proposed law would prohibit the sale of the indestructible synthetic detergents after June 30, 1962. Germany has a more critical problem than many areas: Its "used" water from one city very often becomes the supply for another city further down the river.

In the U.S. the problem is not as critical, except in isolated areas. *Chemical Week* believes that no drastic change will be made in the next three or four years. Detergent makers are reluctant to do anything until a truly economical substitute is found for ABS.

But the U.S. Surgeon General, who serves as the government's medical conscience, now is recommending that the ABS content of water on public transportation contain no more ABS than 0.5 ppm. Local governments may take a similar position, and political pressure might build up against the detergent makers. ●

Engines Burn All Fuels

Inexpensive changes in combustion design give new versatility to diesel—and manufacturers the world over are getting interested.

TRUCKS, BUSES—and perhaps even automobiles—soon may be alternately using gasoline, kerosene, diesel, and jet fuels.

Multi-fuel engines make sense to a lot of users. To the military, it means the ability to use what fuel is available at any location. To civilians in remote areas, it can permit the stocking of a single fuel for trucks, buses and planes. To price-conscious truckers, it represents the ability to shift from one fuel to another as the price picture changes.

Multi-fuel engines are not new, but they have been undergoing major technical refinements—and interest in them is picking up everywhere. France's Berliet more than two years ago displayed the prototype of a double-injection engine that ran on anything from gasoline to peanut oil (IM—March '59). Britain's Rootes Motors last year introduced a multi-fuel engine, and now the U. S. A.'s biggest automotive manufacturer — General Motors—has come out with its version.

• **For the Military**—GM's Detroit Diesel Division has developed a line of 12 piston engines, ranging from 20 to 650 hp, which run on anything from No. 2 diesel fuel to high-test gasoline. The engines have been designed specifically for the military, who for some time have been looking for power plants that can run on any fuel available in time of war.

But commercial prospects for the new engine appear to be good. *Fleet Owner* magazine predicts that within a few years almost all diesel trucks will be equipped to run on various fuels.

• **Simplicity**—The beauty of the Detroit Diesel engine, according to automotive engineers, is its simplicity. Earlier multi-fuel engines were costly to build, complicated to maintain, and normally required major adjustments in the field when switching from one fuel to another.

The Detroit Diesel engine requires no major adjustment in the field. Its versatility has been designed into the engine—by high-domed pistons to increase the compression ratio, modified needle valve injectors, and a fuel pump that is powered by an electric motor.

And the cost of multi-fuel capability is low: about $16 per cylinder more than for conventional diesels. This raises the cost of a typical four-cylinder engine, priced at $2,500 to $3,000, by no more than $60 to $70.

Detroit Diesel also is selling a kit for converting present diesel engines to multi-fuel use. The kit consists basically of needle-valve injectors for each cylinder, a fuel transfer pump, and a fuel tank booster pump. Total cost is about $200.

• **Controlled Injection** — The critical factor in the new multi-fuel engine is its use of improved needle valve injectors. An injector essentially is a piston-type pump that forces fuel through a nozzle in the combustion chamber. In the conventional injector, a large amount of fuel stays between the pump section and the hot nozzle. With fuel oil, this is all right. But gasoline vaporizes as it is forced out of the injector after combustion takes place.

The Detroit Diesel injector has its seat very close to the nozzle. The fuel volume exposed to heat is extremely small, and even if it vaporizes out between cylinder firings, the loss is minute. Also, the needle valve, because of higher opening and closing pressures, results in better atomization of small quantities of fuel.

Increasing the compression ratio of the new engine from 17.5 to 1 to 23 to 1 has been done by simply redesigning the piston, which has added nothing to manufacturing costs. Detroit Diesel says that a high compression of 23 to 1 gets the greatest possible power output from any fuel burned. ●

TINY IMAGES on punched cards can be quickly printed or viewed in original size

Research Is Speeded Up

THE PROBLEM of what to do with technical information — how to store it, how to index it, how to retrieve it—still plagues scientists and librarians everywhere.

In the U. S., some degree of help now is promised from two new advances in mechanized information handling: (1) a computer-controlled metallurgical file set up by Western Reserve University's Center for Documentation and Communication; (2) an electronic-film system developed by International Business Machines Corp.

• **Swift Service** — Western Reserve's system, a service to members of the American Society of Metals, already has stored 65,000 metallurgical and chemical abstracts on magnetic tape, and new material is being added at the rate of 35,000 abstracts a year.

Western Reserve collects and abstracts over 3,400 publications. Technicians then convert key phrases of these abstracts into a 40,000-word code language for computer use.

When a subscriber is seeking information, his inquiry must be similarly coded into machine language. The programmed question is run through the computer with the stored literature. Out of the computer comes a list of articles relating to the subject.

• **Image Storage**—IBM's new information retrieval system, known as WALNUT, is a prototype developed for the U. S. government's Central Intelligence Agency. The heart of the system is a collection of film strips on which documents have been reduced to about 1/1000th of their original size.

A user starts his search by writing on a form a list of key words—such as "space", "nylon", "radiation" — which are then transferred onto punched tape for electronically searching the stored film strips. The machine produces a list of documents corresponding to the key-word questions asked.

The user makes his selections and pulls punched cards from the machine corresponding to his selections. The punched information—including data on the location of the desired film—is then transferred from these file cards to aperture cards containing unexposed film inserts.

When an aperture card is inserted into the system, it then locates the document image required and brings it into lense position. The film insert is automatically exposed by ultra-violet light to the desired image, and developed instantly.

Though WALNUT is not presently planned for commercial use, IBM expects the emerging technology to lead to "total information processing systems." One possibility is a desk console for executives that could bring any form of business information into view—a balance sheet, a sales report, design details—as either a projected picture or as written information. ●

More Value

Through value analysis management can get equivalent performance for lower cost.

"HOW CAN value analysis help me with my one-centimeter standard steel bolts?"

Such was the challenge laid down by a factory manager, who used thousands of bolts of this kind for sandwiching cable reels between wooden disks. Aware of the saving to others through value analysis (drawings right), he considered his problem simple and routine.

Lawrence D. Miles quotes the manager's view in his new book "Techniques of Value Analysis and Engineering" (McGraw-Hill, New York, 1961) as typical of those who are reluctant to consider a new approach to an established production or procurement practice.

A value engineer accepted the challenge. After consultation with a bolt supplier, he came up with an alternative—threaded studs with nuts at either end. The studs could be supplied with one nut already chased onto them, so that for user's purpose they were the same as bolts—but 15% cheaper.

The example illustrates one of the basic tenets of value analysis: In its search for savings, management must be constantly thinking in terms of *function.*

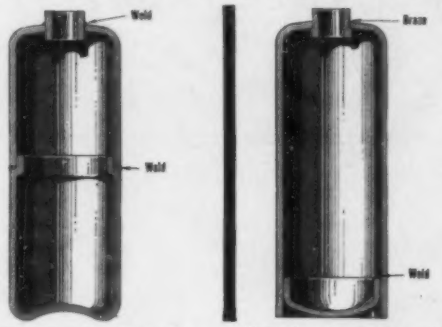
What job is being done here? What parts or tools are doing the job? What is it costing? How else could we operate? Could any item do the job better or cheaper?

Value analysis has for its purpose the efficient identification of unnecessary cost, writes Miles, manager of value service for U.S.A.'s General Electric Co. The technique "focuses engineering, manufacturing and purchasing attention on one objective—equivalent performance for lower cost."

Costs are cut without in any way reducing the qualities, reliability, or esteem features of a product. The technique today is saving individual companies millions of dollars a year by comparatively simple changes—in materials, design, packaging—like those at right, reported by *Purchasing Week.*

—The Same Job at Lower Cost

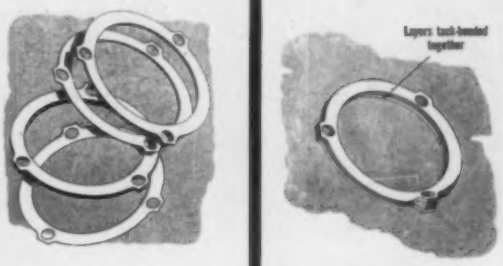
Brazing cuts down on distortion



BEFORE: Half shells were welded together to form fire extinguisher; stud was welded to cylinder top.

NOW: Cap is welded on bottom of single shell, stud brazed to top. Less heat offers less distortion.

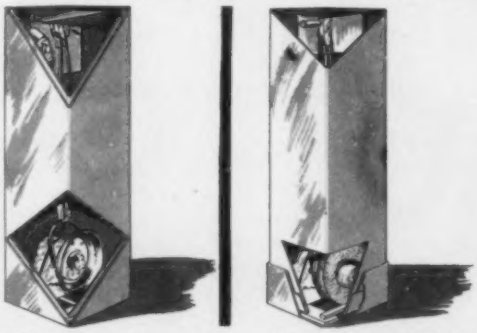
Fewer shims means less inventory



BEFORE: Aircraft engine maker had to stock 18 shims of varying thicknesses to make correct adjustments.

NOW: Shims made up of multiple laminations are peeled down for desired thickness. Stock reduced to 3 items.

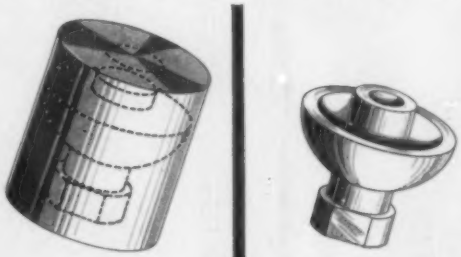
Packaging cost is reduced 48%



BEFORE: Floor polisher was held in carton by full-sized scored sheet that rested on a bulky wood base.

NOW: Flaps at the top and a slotted insert at the bottom replace the scored sheet, and the wood base is simpler.

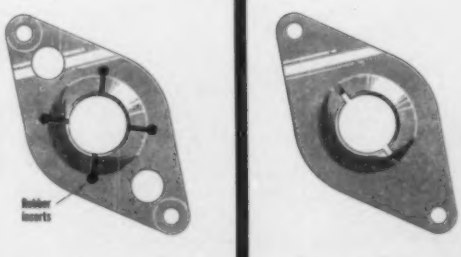
Casting does away with scrap loss



BEFORE: About 75% of brass went into scrap, when this rear-view mirror swivel was made by screw machine.

NOW: Analysis led to a die casting that eliminates scrap loss and all machining, and costs a third as much.

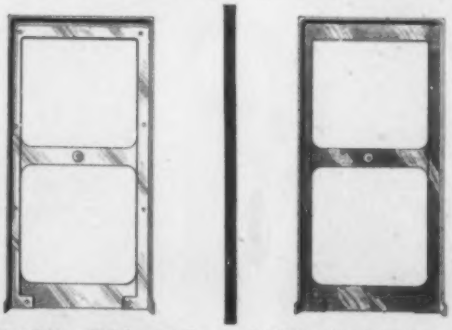
Redesigned as a punched stamping



BEFORE: Friction shaft lock was machined from solid stock, then rubber inserts were molded in.

NOW: Part is stamped and punched from flat stock, with no inserts, and the cost has been cut at least 92%.

Anodized coating replaces chrome



BEFORE: This metal electrical component rack used to be coated with 12.5 microns of costly chromium.

NOW: Anodized coating covered with a dry film lubricant is equally serviceable, costs about 59% as much.

Problems Catch Up With Germany's Chemical Trio

The "Big Three" are girding themselves for a squeeze on profits and a continuing labor shortage. There will be increasing competition from outsiders. But how much competition will there be among the Three?

Karl Winnacker of Hoechst

Ulrich Haberland of Bayer

Carl Wurster of BASF

THE BIG THREE of West Germany's chemical industry each have annual sales virtually as big as I.G. Farben had at its peak. These are the successor companies to the prewar Farben cartel — Farbenfabriken Bayer AG, Farbwerke Hoechst AG, and Badische Analin & Soda Fabrik AG, and much credit for their resurgence goes to their aggressive and efficient management, led by the three men on the left.

But now a decade and a half of clear business weather for these companies is showing signs of clouding. While total German chemical industry sales last year were up 12% over 1959, sales this year are expected to be only about 6% greater than 1960.

Exports, which posted a 14% gain in 1960, are expected to rise only 6% this year; and chemical imports into West Germany are climbing at a startling rate—up 32% last year to a level of $700-million.

Then there is the fact that prices for German chemicals keep sliding, moderately but steadily, at a time when prices for most German products are going moderately and steadily upward. On top of that, wages in the chemical industry rose 14% last year. Thus a cost-price squeeze is threatening the Big Three's handsome profits, which are believed to run between 20% and 25% of turnover before taxes.

• **More Problems**—Further troubles are ahead, as foreign competition steadily increases. Each month, the European Economic Community attracts the jealous eyes of more British and North American competitors. And the prospects of an EEC association with Britain and others of the Seven adds to this attraction.

Competition in third markets is also increasing as other Europeans expand abroad and the Americans become more export-minded; as nations that never had a significant chemical industry, such as Austria and the Scandinavian countries, get into the business; as even developing nations consider embryo chemical industries.

Problems and more problems for Messrs. Winnacker, Haberland, and Wurster. Add the German labor shortage, which helps to drive up wages and puts a crimp in expansion plans. Add the tight credit, which is troublesome for an industry with an unusually high rate of obsolescence. Add the recent 5% revaluation of the D-mark, which has pinched, albeit slightly, export revenues.

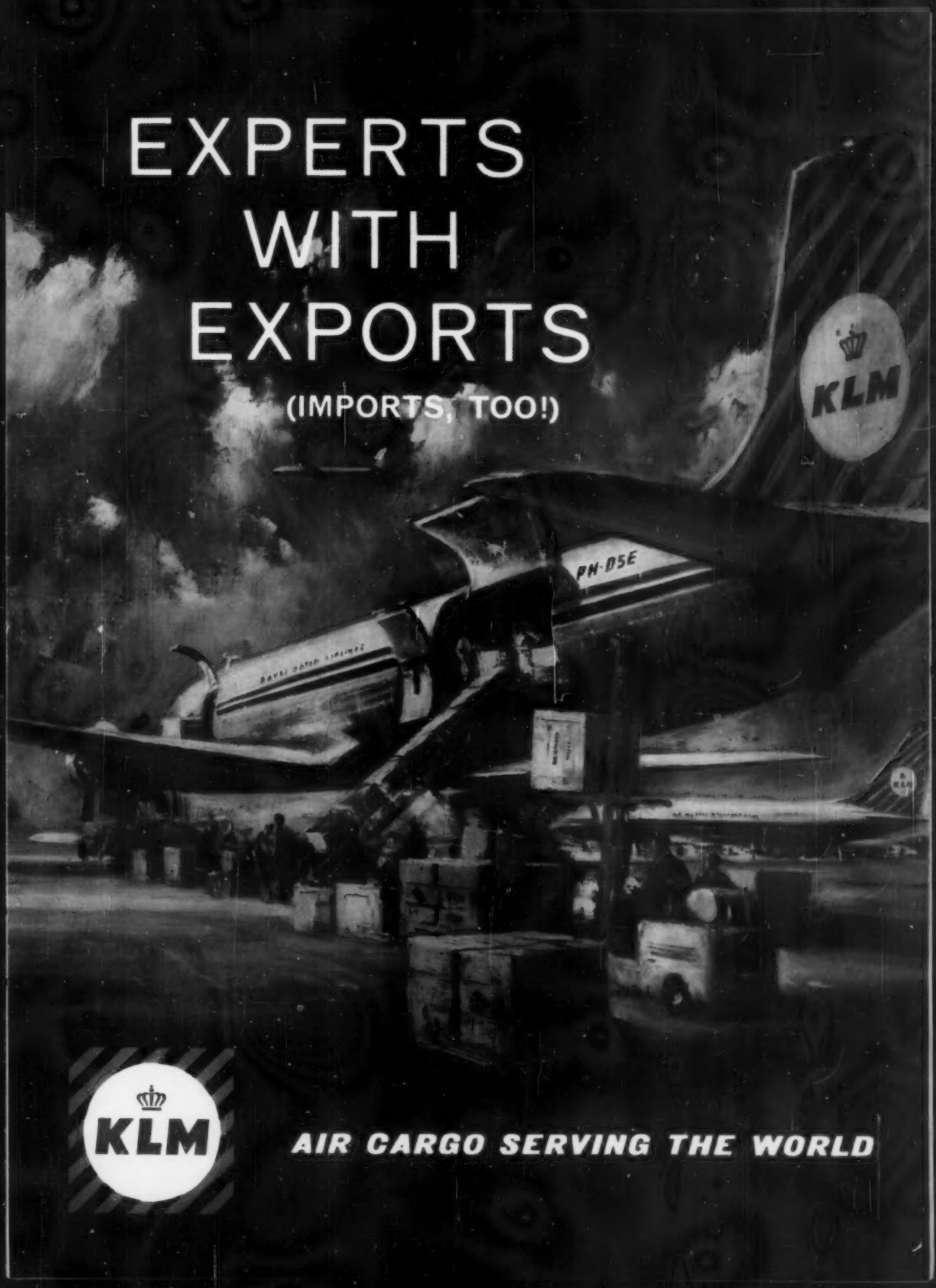
Where will the Big Three go from here? Will they recombine into another Farben-like cartel? Or have they found other answers to their problems?

I. Cartel Bound?

The Big Three, it should be remembered, started out more or less equal in 1952. At that time, Allied occupation authorities turned the Farben offspring loose, with a former plant manager from each segment of the cartel in charge of the successor companies.

Karl Winnacker took over Hoechst, which received 100% of such former Farben companies such as Knapsack-Griesheim, Kalle, and Behringwerke. In addition, it received 77.5% of the stock of Friedrich Uhde, the engineering firm, and 50% of Wacker Chemie. Hoechst also took over the Farben plants in the Rhein-Main area.

Ulrich Haberland took charge of Bayer, with plants at Leverkusen,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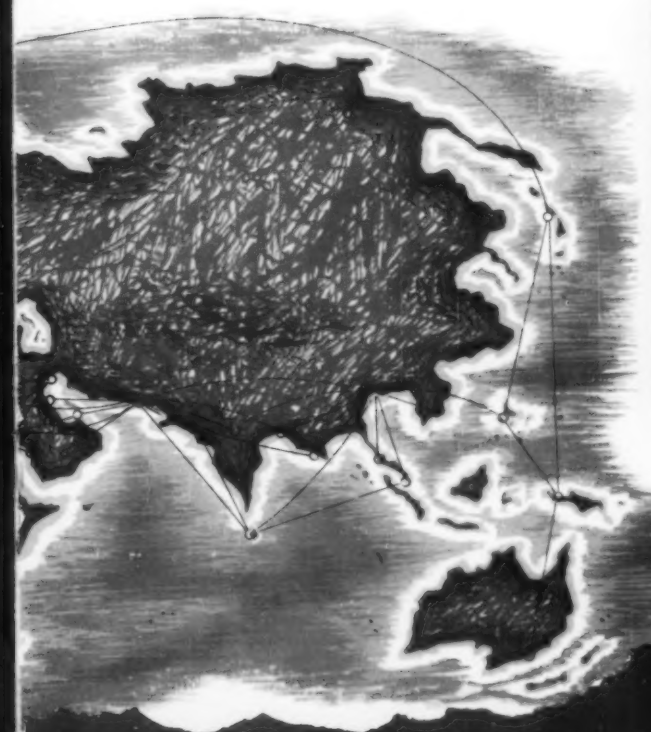

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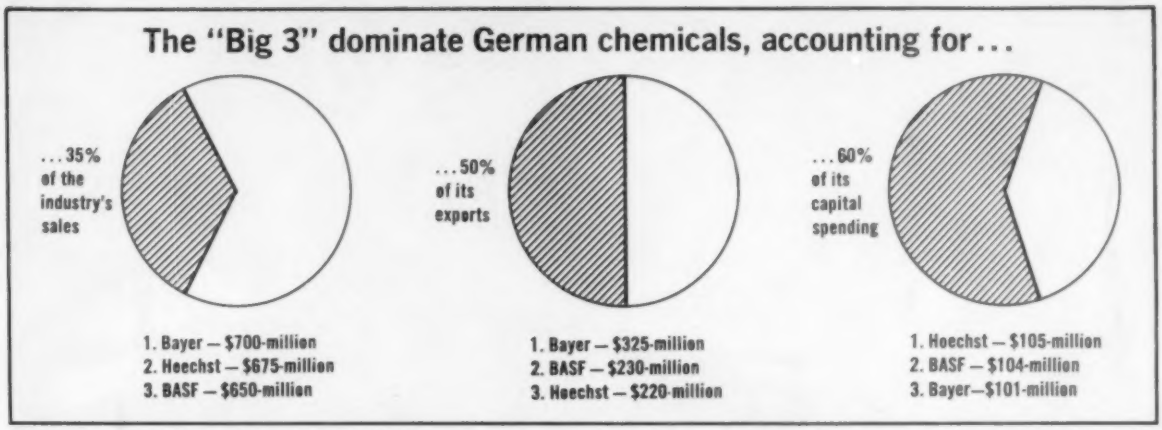
The "Big 3" dominate German chemicals, accounting for...
...35% of the industry's sales
1. Bayer — $700-million
2. Hoechst — $675-million
3. BASF — $650-million
...50% of its exports
1. Bayer — $325-million
2. BASF — $230-million
3. Hoechst — $220-million
...60% of its capital spending
1. Hoechst — $105-million
2. BASF — $104-million
3. Bayer—$101-million

Elberfeld and Uerdingen. Agfa AG, the photochemical company, also was in the Bayer fold.

Carl Wurster, who had been boss of BASF's huge Ludwigshaven plant, moved into the presidency of this one-plant company.

Two smaller companies were also formed out of the I. G. Farben complex: Chemische Werke Huels GmbH and Casella Farbwerke Mainkur AG.

• **Growing Bigger**—The specter of reconcentration is raised by the aggressive purchase of chemical-company shares by the Big Three —especially shares of the two smaller "Farben" companies.

"The Three" together now own 75% of Cassella, each holding 25% of the shares. How much of Huels they own is not known. It is certain, however, that through a firm called Synthesekautschuk, they control 50% of Huel's major subsidiary, Bunawerke Huels.

Moreover, each of the Three own a third of Duisburger Kupferhuette, a producer of iron ore and pyrites. And each has also branched out on its own, buying into related fields such as coal, fluorite, chalk. And BASF owns 46% of Chemische Fabrik Holten; Bayer fully owns Haarmann & Reimer, a heavy chemicals producer. Hoechst owns 60% of Spinnstoffabrik Zehlendorf, a synthetic yarn processor.

II. Perspective

Any charge that the Big Three are "taking over" German chemicals, however, must face two facts: There are at least 5,000 chemical producers in Germany today; and while the Big Three account for 35% of total sales, the next 25% is taken by 80 relatively independent companies.

In fact, the Big Three are probably no more dominant in German chemicals than are the major companies in Britain, France, Italy—and in the U.S.A., for that matter. Modern chemical technology requires big companies with big plants and a lot of money to spend on research.

• **Anti-Cartel**—Are there any factors working against a new Farben combination? World public opinion is still a tremendous influence. With their heavy stake in world markets, the Big Three managers are acutely aware that bigness in itself may be defensible, but that monolithic bigness is quite another matter, especially in view of Farben's history.

And there may be a better business reason for not joining together. Some former Farben men claim the old cartel was too big in its day. "We had lost control over all our parts," one man recalls. "Certain branches were making commitments that contradicted what other branches were doing. This made us lose flexibility—in trying to avoid contradictions, we took too long to decide to do anything at all."

None of the Big Three admits to being too big now. But executives do argue that by merging they might be making a mistake.

• **A Little Competition**—The current attitude of The Three toward each other is summed up in the observation of one executive: "Competition—at least a little competition—is a good thing."

How much competition is there? Superficially, all three firms produce the full range of chemical products—plastics, synthetic fibers and films, solvents, paints, dyes, textile chemicals, organic intermediates, pharmaceuticals, fertilizers, pesticides, and various heavy chemicals. Yet a closer look at their catalogs shows that competition on the open market—as opposed to raw material chemicals—is actually rather limited.

There are exceptions, such as agricultural chemicals. But most Bayer dyes and pharmaceuticals, for instance, are not exactly the same as Hoechst's or BASF's. The reason: Each segment of the Farben cartel was highly specialized, and this heritage carried over to the present companies.

III. A New Era

A new era for the companies began only when they entered the new fields of chemistry. They discovered that the new synthetics and plastics could be made economically only from petroleum. So after a century of making their chemicals from coal, they began the revolutionary shift to petrochemicals.

Unquestionably, this shift to petroleum and natural gas is what dominates each company's plans for the future. In the past few years, the Big Three have put upwards of 60% of their investment budget into petrochemicals. Last year, West Germany became the biggest petrochemical producer in Europe, passing Britain for the first time.

• **Material Supply**—Since Germany is not a petroleum producer, the Three have moved to insure a source of "feedstock." Both Bayer and BASF are taking the joint

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A foreign visitor to one of the big Swedish shipyards once asked, not altogether innocently: "Do you dust the steel plates every morning?" At Svenska Metallverken you won't see us dusting steel plates, because we don't have any (although quite a lot of our aluminium does go into ships). But you *will* see the same general tidiness that impressed the visitor to the shipyard. In nonferrous metal manufacturing it is highly important to prevent impurities from entering the product — which is one of the reasons why we install automatic machinery, and why we insist on clean floors and clean machines. The wage agreement we have with our workers does, in fact, include a stipulation that they shall spend the last *paid* hour of the week cleaning their machines. It pays all around.

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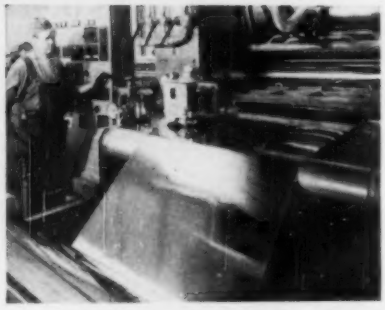

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venture route. With British Petroleum, Bayer formed Erdoel Chemie to operate a petrochemical plant at Dormagen. BASF teamed up with Deutsche Shell in Rheinische Olefinwerke near Cologne. Both plants are supplied by nearby petroleum refineries.

Taking a different approach, Hoechst lured the U.S.A.'s Caltex oil company into building a major refinery just down the Main River from Hoechst's large petrochemical complex near Frankfurt; construction is now getting underway. Hoechst bought a 180-hectare tract for leasing to Caltex and signed a long-term purchase agreement; according to some reports, Hoechst also helped out on the financing.

When it comes to processing the final products, the three companies use a variety of approaches. Hoechst joined Celanese Corp. in forming Bobina Faser Werke to produce an acrylic-type fiber called Travis. For polyethylene production, it is more or less standard among the Three to pay royalties to licensors for the use of processing techniques.

In this shift to petrochemicals, the Big Three see their best answer to the problem of competing with the Americans and the British. Despite the current overcapacity in the world industry, the Germans see their future in synthetic fibers and plastics. Furthermore, using petroleum as a base will lower costs in some of their traditional areas of chemical processing.

• **Labor Problem**—Looking to the future, the German labor shortage is very much on the minds of Winnacker, Haberland, and Wurster. They already employ nearly 5,000 foreign workmen, supplementing 156,000 Germans. Foreign employees create serious problems of language and assimilation, however, and importing them is not considered a long-range solution.

The most promising approach is to take production to the workers —as well as to new markets. Bayer and BASF already have several joint ventures with foreign partners. Bayer's recent decision to build a major chemical complex at Antwerp was motivated largely by the labor situation. Finally, building abroad has the advantage of being an excellent entry into the foreign market in question. ●

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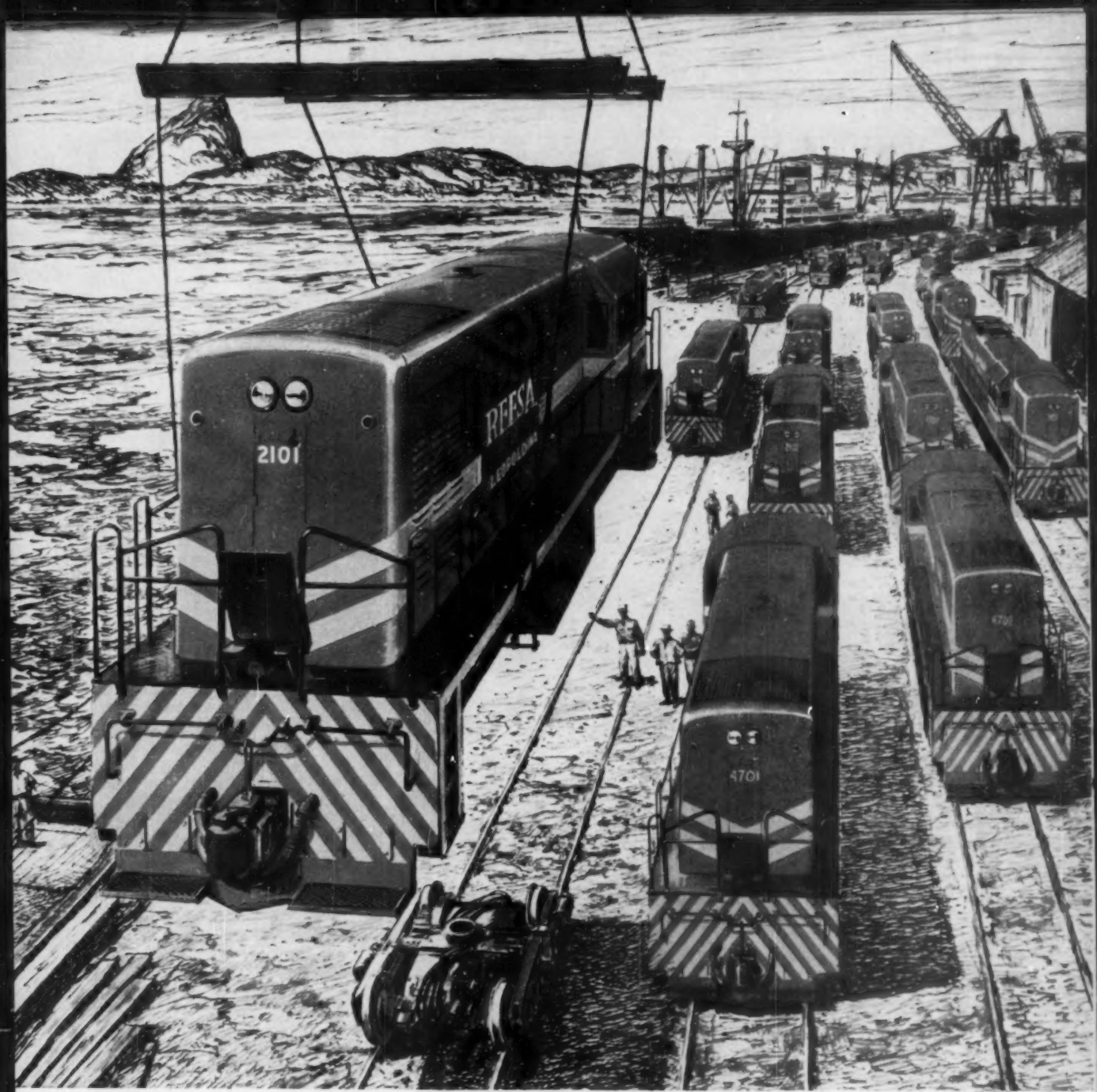

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Progress in Medical Electronics

Here are some of the electronic aids developed—chiefly by U. S. manufacturers—to help those deprived of sight, speech, and hearing.

OF ALL sensory aids, hearing aids are by far the most common: They are practicable, economically feasible, and commercially available. In contrast, blind guidance devices and aids for the dumb are not so far advanced. But some interesting techniques have been developed, some of which are described below.

• **For the Deaf**—Great progress has been made from the bulky, vacuum-tube hearing aids of 20 years ago, with their separate battery cases, to the inconspicuous devices of today that are smaller than a thimble and weigh less than nine grams. Personal vanity plays a big part in the choice of a hearing aid, and this has influenced manufacturers. Modern hearing aids are tiny, cordless units that fit neatly behind the ear, are mounted into eye-glass frames, or are placed completely within the ear entrance.

Ear-level aids usually do not have enough power to compensate for all hearing losses and so are recommended only for slight or moderate deafness (body aids are worn by the very hard-of-hearing). One example, made by Zenith Corp., is pictured above. It hooks over the outer ear, the only visible evidence being a tiny tube entering the ear canal. Dahlberg Co. has an in-the-ear aid, Miracle-Ear III, that contains two transistors and weighs seven grams. A barrette, or clip-on, aid, again from Zenith, weighs 28 grams and has a unique top-mounted microphone that reduces noise from the rustle of clothing.

Eyeglass aids generally have the microphone, electronic circuits, earphone, and battery mounted in one frame. Most of them have a special telephone pick-up and switch. Sonotone Corp.'s Sovereign 430 aid permits normal use of the phone by mounting the microphone and telephone pick-up switch just in front of the ear. Acousticon Corp.'s new model A920 bone conduction aid, unlike most others, uses both frames. The output transducers are a head-width away from the rest of the aid, so that there is maximum power transfer without feedback—and less pressure on the head.

A novelty is an in-the-mouth hearing aid, developed in Israel, which is shaped like a pipe. When held in the mouth, it transmits vibrations through the teeth to the bone structure of the skull.

• **For the Dumb**—Bell Labs., in cooperation with the Nat. Hospital for Speech Disorders, has developed the transistorized artificial larnyx pictured above. Weighing less than 200 grams, the device resembles an electric shaver. It consists of a modified telephone receiver used as a vibrating driver that is placed against the throat, a transistorized pulse generating circuit, and a mercury battery power supply. Sound waves are transmitted through the throat wall into the larynx cavity. The user forms words with his lips and tongue just as in normal conversation.

• **For the Blind**—A lot of work has been done to develop electronic guidance devices for the blind, although their practical application is nowhere near that of hearing aids. The limit to their performance is not electronic but psychological. Using a guidance device is rather like walking in a deep wood on a very dark night with a tiny flashlight for picking your way. Most of your information comes in little packages that must be pieced together by scanning the area ahead.

The electronic cane shown on this page uses the radar-like echo return principle to detect downwards steps. The user has the advantages of a conventional cane, but instead of tapping the ground with it holds it just above the ground. By adjusting a control in the handle he listens for a signal with an earphone. When the cane passes over the edge of a curb, there is a warning whistle or tactile signal. General Dynamics Electronics Corp. is the manufacturer.

Air-cushioned materials handling

News that the "air-car" principle will be adapted to industrial materials handling comes from Clark Equipment Co. of Battle Creek, Michigan, U. S. A. Clark has been licensed to use the Glide-Air system developed by Douglas Aircraft Co. in California, which uses a jet of high pressure to keep the load off the surface and eliminate friction. First two applications (expected on the market next year) are a "rollerless conveyor" and a "wheelless pallet." The conveyor will use the air pressure to put a layer of air under a load. In the case of the pallet, air pressure will keep both pallet and load from touching the floor. With both applications, horizontal movement will be provided by an operator pushing the load along from behind with little effort, or by a mechanical device like a simplified overhead conveyor line.

Versatile coating reflects heat

A young U. S. company, Thermo-Chem Corp. of Penndel, Pennsylvania, has brought out an aluminum coating that is flexible, reflective, and has good resistance to cracking and abrasion. Its first commercial application is in a welder's glove, combined with terry-cloth. But it is also being tested for other uses: upgrading low-cost filter cloth and urethane foam; increasing the thermal efficiency of asbestos insulation; reinforcing ceramic fibers at high temperature.

"Free-piston" aerosol

A basically different kind of pressurized container for viscous products, called MiraFlo, has been developed by American Can Co. of New York. Its novelty is in the fact that it has a loose-fitting polyethylene piston inside which keeps the propellant gas from mixing with the contents and enables an unusually high percentage of the product to be expelled (97%, the company claims). Also unlike conventional aerosols, the container will dispense viscous products in any position. Suggested uses: for pharmaceuticals and cosmetics, foods (e.g. sauces and spreads), printing inks.

"Toning up" cattle in winter

A South African company, National Chemical Products, has developed a formula called Rumevite for improving the condition of cattle during the dry winter season. The product stimulates the animals' rumenal activity, and hence their appetite, so that they eat

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Liars, beware!

A pocket-sized lie detector from Japan is being exported at $12.50 per unit "in lots of more than 300." Transistorized and battery-powered, (22.5 volts), the Deceptograph measures the change in a person's pulse, breathing, and blood pressure caused by the "mental commotion" of telling a lie—or just thinking a lie. Taksi Kiki-Kogyo Ltd. of Tokyo make the unit; Chuo Sangyo K. K., Tokyo, export it.

"Most powerful" computer

Ferranti Ltd. of the U.K. is putting into production its Atlas computer, said to be the most powerful such machine in the world. Costing nearly $10-million with peripheral equipment, Atlas can perform about a million simple operations per second, roughly 300,000 more complex ones. It gets its great speed from three essentially new features: (1) a fast-carry adder circuit, (2) a fixed store which is able to hold frequently-needed data and from which information can be extracted much faster than from existing computers, (3) an automatic supervisory system. The first unit is to be installed at the Nat. Inst. for Research in Nuclear Science at Harwell.

Plastics for planes

Two recent examples show how plastics can be used to advantage in airplane construction. The gyroplane shown above, made by Avian Aircraft Ltd. of Georgetown, Canada, has a body made of a polyester-glass combination called Reinforced Hetron. Its chief virtues: strength, light weight, resistance to fatigue, fire-retardant properties. Plastics also eliminated expensive tooling and panel work on the multiple-curved surfaces of the fuselage. Meanwhile, in Sweden, what is claimed to be the first Fiberglas-reinforced plastic undercarriage has been produced by AB Malmo Flygin-

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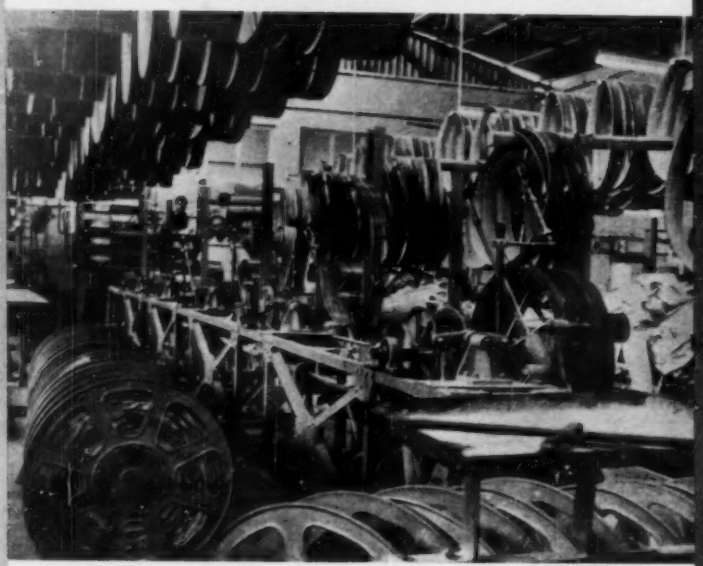

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Large shapes cast from nylon

Polymer Corp. of the U. S. has announced a new process for casting large nylon shapes, which it says will be competitive with metal and substantially reduce costs of fabricating the plastic. The process, called monomer casting, converts liquid monomer directly to the finished shape at temperatures far below the melting point of the final part. No pressure is necessary. The nylon and a catalyst are poured into a mold and cast much as metals are cast in a foundry. Large parts weighing 360 kg. have been made at a cost of $3 to $5/½ kg.

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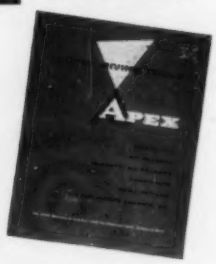

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Cost-Control Accounting: A

The mechanics of cost control are relatively simple. But for it to succeed management must re-examine some basic attitudes.

IN COMPANIES that do not gather cost data, management has only a vague idea of how much it costs to operate each section of the company, or which supervisors are doing a good job of controlling costs. If the company makes more than one product, management does not even know how much each product costs to make.

There are—surprisingly—plenty of companies that do not collect this essential information. On the other hand, many companies that have well-conceived, even elaborate, cost-gathering systems use the data only for historical purposes.

Certainly historical cost figures can be put to good use. They at least provide a basis for product pricing or bidding on contracts; they come in very handy when investment in new machinery is being considered. Still, a cost-gathering system is only a jump, a big jump perhaps, but still only a jump away from a cost-control system.

Why do not more companies try to control costs? After all, there are proved accounting techniques that can put cost control on a systematic basis. In name, however, "cost accounting" is being replaced by "responsibility accounting" or "responsibility reporting"—implying a dynamic management function rather than a traditional accounting function.

I. Why It Lags

On the right is outlined a typical cost-control reporting system of a small U.S. metalworking company. It was designed by the international public-accounting and management-consulting firm of Peat, Marwick, Mitchell & Co. It is a good example of how one company set out to control its significant costs. It can also be used to point out some of the misconceptions which cause cost control to lag.

Cost control undoubtedly offers a great reward to companies who are concerned about high labor costs. Note that the cost report of the punch-press foreman is almost completely devoted to labor costs: direct labor, rework labor, indirect labor, overtime premium payments, supervision expense. In fact, only two non-labor elements are included: operating supplies and spoilage. This company obviously places great stress on controlling labor costs.

In contrast, managements in many nations think of labor almost as a fixed cost—a sort of "overhead" expense they cannot do much about. Paternalistic traditions contribute to this attitude. And in many cases, social security laws and practices give management little leeway in controlling labor expense. Management has a natural tendency to throw up its hands.

Yet even under these circumstances, cost-control reports can be a useful tool. In every company there are important areas of controllable expenses besides production labor. Such things as materials, supplies, tools, spoilage, and rework costs might be of immense importance. Remember, cost-control reports can be concerned with any elements that will help the manager to do a better job.

• **Delegation** — Another reason why cost-control reporting is not more widely used: It requires delegating authority. Many chief executives simply do not believe in delegating any real responsibility—even on the middle management level, much less the supervisor level. Yet for cost control to work, it must operate on the level where costs are actually incurred. This means extending responsibility for costs down to the operating foreman's level.

One excuse often given for not delegating is that lower-level management is unqualified to wield responsibility, or to carry out sophisticated cost-control measures. No doubt this is a problem. But experts in management theory contend that human beings tend to exhibit responsibility only when given a certain freedom of action. In other words, the only way to test the theory of delegating is to delegate.

A practical suggestion was reported by INTERNATIONAL MANAGEMENT in April (*"For Foremen, a Big Change"*). One U.S. company, preparing to install a "responsibility reporting" system, drastically reduced the number of foremen—from 45 to 10—to create a first line of management of exceptionally high caliber. Salaries paid these "section managers", as they are now called, are double the old foreman's rate. And each section manager has two production assistants to perform routine tasks such as keeping track of time cards and seeing that material is on hand.

• **Organization**—A third reason why cost-control reporting is not widely used follows from the lack of delegation—which is a good sign of a confused organizational structure. A cost-control reporting system must be directly related to organization. This means that the organization chart must be more than decoration on the general manager's wall: It must show an actual chain of command as logical as a military chart progressing downward from general to lieutenant.

The general principles of organization are well known, and are not difficult to apply. Every man must know his specific responsibility. Every man must have only one boss. Levels of management must be formed out of logical groupings of activities (either geographical or functional). The best way to test an organization is to put into writing the specific duties and responsibilities that go with every job on the chart.

II. Consider the Chief

To understand the importance of organization in practical terms,

Neglected Technique

consider the chief executive who has become aware of a bad situation in regard to mounting losses in form of scrap. He can complain all he wants to, but unless there is a clearly-defined responsibility for scrap loss, he will find it exceedingly difficult to improve the situation.

Perhaps the crucial test of an organization comes when the chief executive is ready to retire. It is a classic situation in the world today: The dynamic businessman who built a thriving enterprise with his own hands, so to speak, keeping his business records "in his hat," comes face to face with this question, "What will happen to my business when I leave?"

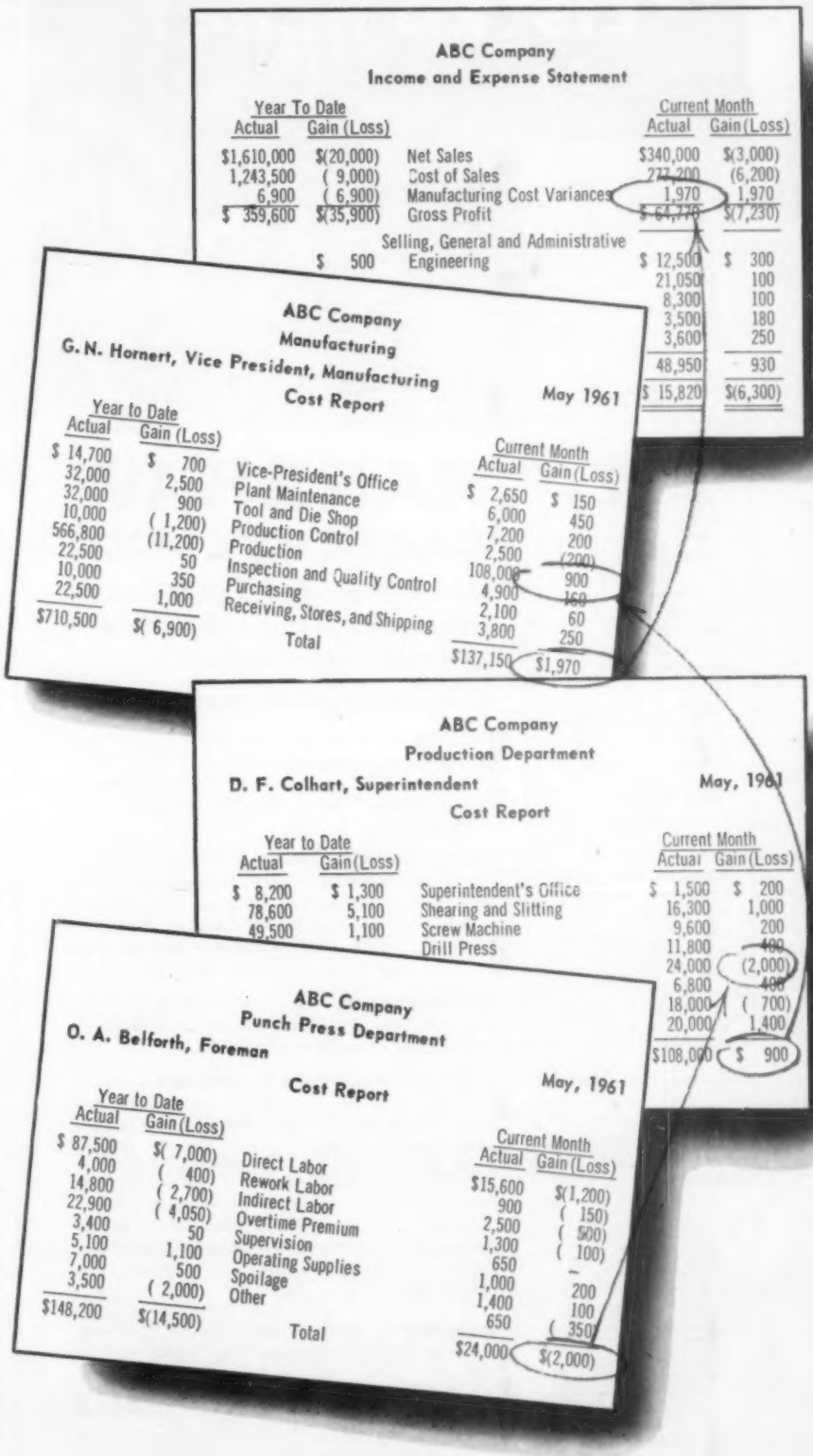
Responsibility reporting offers him an excellent point of departure. To install a cost-control system, it is essential to assess personnel weaknesses, to come to terms with the problems of delegating authority and organizing along logical principles.

III. Holding Back

In some cases, management may be holding back on cost control because of misconceptions. For cost control to be most effective, it should be combined with some sort of budget system. Then actual expenditures can be compared with budgeted figures, providing one measure of management performance.

Nevertheless, management should not hold back on cost reporting because of a reluctance to go into budgeting, or related techniques such as standard costs and work measurement. It is quite practical for cost reporting to operate without budgets. A management expert might insist that only with budgets can you have true cost control. But any technique that creates cost "awareness" is worthy of management's attention.

Neither should a company avoid cost reporting because it does not



ABC Company
Income and Expense Statement

Year To Date Actual	Year To Date Gain (Loss)		Current Month Actual	Current Month Gain (Loss)
$1,610,000	$(20,000)	Net Sales	$340,000	$(3,000)
1,243,500	(9,000)	Cost of Sales	277,200	(6,200)
6,900	(6,900)	Manufacturing Cost Variances	1,970	1,970
$ 359,600	$(35,900)	Gross Profit	$ 64,770	$(7,230)
		Selling, General and Administrative		
$ 500		Engineering	$ 12,500	$ 300
			21,050	100
			8,300	100
			3,500	180
			3,600	250
			48,950	930
			$ 15,820	$(6,300)

ABC Company
Manufacturing
G. N. Hornert, Vice President, Manufacturing
Cost Report
May 1961

Year to Date Actual	Year to Date Gain (Loss)		Current Month Actual	Current Month Gain (Loss)
$ 14,700	$ 700	Vice-President's Office	$ 2,650	$ 150
32,000	2,500	Plant Maintenance	6,000	450
32,000	900	Tool and Die Shop	7,200	200
10,000	(1,200)	Production Control	2,500	(200)
566,800	(11,200)	Production	108,000	900
22,500	50	Inspection and Quality Control	4,900	150
10,000	350	Purchasing	2,100	60
22,500	1,000	Receiving, Stores, and Shipping	3,800	250
$710,500	$(6,900)	Total	$137,150	$1,970

ABC Company
Production Department
D. F. Colhart, Superintendent
Cost Report
May, 1961

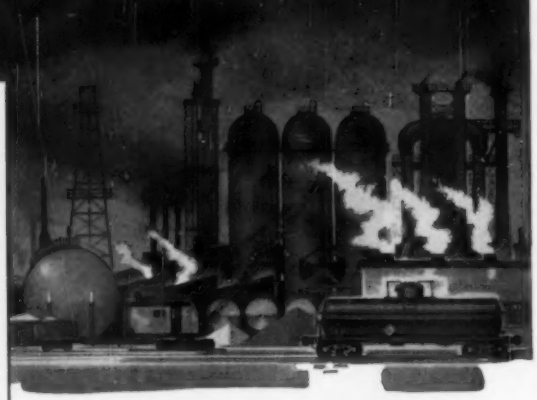
Year to Date Actual	Year to Date Gain (Loss)		Current Month Actual	Current Month Gain (Loss)
$ 8,200	$ 1,300	Superintendent's Office	$ 1,500	$ 200
78,600	5,100	Shearing and Slitting	16,300	1,000
49,500	1,100	Screw Machine	9,600	200
		Drill Press	11,800	400
			24,000	(2,000)
			6,800	400
			18,000	(700)
			20,000	1,400
			$108,000	$ 900

ABC Company
Punch Press Department
O. A. Belforth, Foreman
Cost Report
May, 1961

Year to Date Actual	Year to Date Gain (Loss)		Current Month Actual	Current Month Gain (Loss)
$ 87,500	$(7,000)	Direct Labor	$15,600	$(1,200)
4,000	(400)	Rework Labor	900	(150)
14,800	(2,700)	Indirect Labor	2,500	(500)
22,900	(4,050)	Overtime Premium	1,300	(100)
3,400	50	Supervision	650	-
5,100	1,100	Operating Supplies	1,000	200
7,000	500	Spoilage	1,400	100
3,500	(2,000)	Other	650	(350)
$148,200	$(14,500)	Total	$24,000	$(2,000)

"RESPONSIBILITY REPORTING" begins at the foreman's level and progresses upward. At each level, only controllable costs are included.

IS YOUR INDUSTRY LISTED HERE?



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PAINT, VARNISH, AND PLASTIC—Naphthenate Driers and other Metallic Soaps (Linoresinates, Octasols, Resinates, Soyates)—Cadimum Lithopones—Pigments—CP Cadmium Pigments—Mercury Cadmium Pigments—Antimony Oxide—Organic and Inorganic Dry Colors and Dispersions—Vinyl Stabilizers.

ELECTROPLATING—Nickel Salts: Sulfate, Chloride, and Carbonate—Nickel Anodes—Cadmium Oxide—Bright Nickel Electroplating Processes.

CATALYTIC PROCESSING—Preformed Catalysts—Boron Trifluoride—Hydrofluoric Acid—Nickel Formate—Rufert Nickel Catalyst Flakes (for vegetable oil hydrogenation).

MISCELLANEOUS—Hydrofluoric Acid—Ammonium Bifluoride—Miscellaneous Fluorides—Copper Chloride—Copper Oxide—Copper Naphthenate—Cobalt Sulfate and Carbonate—Manganese Carbonate—Cadmium Oxide—Synthetic Crystals (Optical, Scintillation, Electronic).

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have a lot of separate departments, each with its own foreman. Suppose the punch press foreman in the illustration also supervises shearing and slitting machines, screw machines, and drill presses. In that case, there would be four separate reports, keeping cost figures separate for each operation. The same principle holds for a man in charge of, say, advertising, publicity, sales and trade fair promotion.

• **Product Costing**—As with budgets, cost-control reporting does not have to be coupled with product costing. But if you are going to install a management reporting system, you might as well make it a multi-purpose system. Regardless of the accounting system a company uses, it should be possible to "break out" costs for pricing products and evaluating inventory.

With responsibility reporting, which conforms to the management organization, the simplest way to identify product costs is to use code numbers. And costs must be assigned to products on the lowest level where they occur in the organization—for the most part, this will be at the foreman level.

IV. Helping the Foreman

An important point to note is that management reports should deal only with "whole costs." Operating managers should not be bothered with the problems of prorated costs, or with such things as depreciation, taxes and insurance. Fine points of accounting should be left to the company accountant, controller, treasurer, or whatever he is called. The problem is to design a system that meets the dynamic needs of operating managers, but which also produces the figures needed for historical records and other accounting purposes.

• **At the Source**—A mistaken notion is that foremen must fill out their own cost reports. On the contrary, cost reports should be prepared by a company's accounting section. And it is a good idea to take foremen on a tour to see how source records are collected and processed.

Labor costs, for instance, might derive directly from each de-

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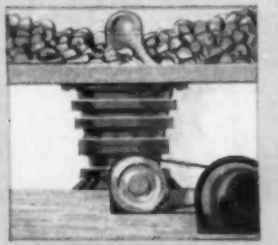
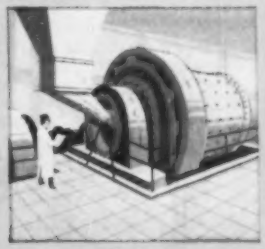
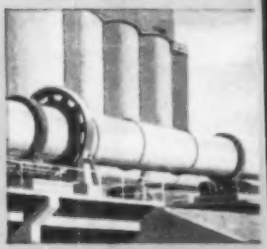


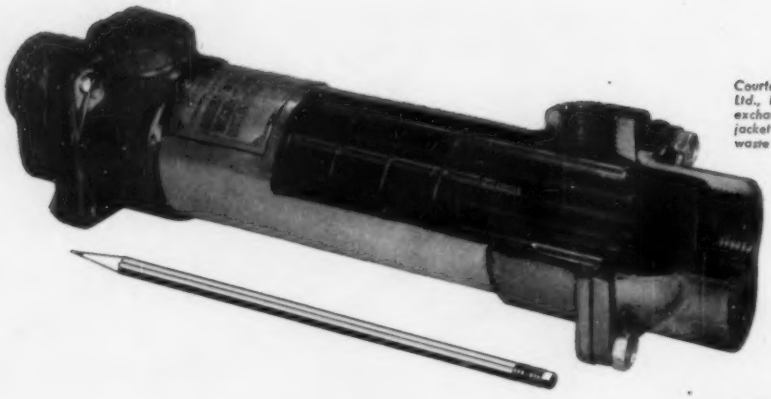
Crushing rock



Grinding



Making cement



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partment's time cards; tool and supply costs might come from records maintained by the stockrooms; material costs might be supplied by the purchasing department. The source of each cost figure depends on a company's internal organization.

• **Assistance**—Companies often find that foremen need assistance in interpreting their reports. One method of offering assistance was recently described by *Factory* magazine: At the U.S.A.'s Minneapolis-Honeywell Co., full-time "cost coordinators" are assigned to each big department or group of small departments.

These coordinators help the foremen to analyse their costs, and to locate areas where costs might be reduced. They are staff men with no direct authority—the foremen retain their full responsibility for controlling costs.

• **Based on Budgets**—The Honeywell company bases its cost-control system on budgets. To help foremen write better budgets, the company is instructing them in the characteristics of each expense item. But Honeywell has already discovered one of the joys of delegating cost responsibility — operating foremen tend to set tighter limits in their budgets than would production engineers or other "outsiders." Honeywell once set budgets for its foremen.

Honeywell has a rule that a superior can challenge the budget of a manager under him, but he cannot change the budget without the manager's consent. Budgets are discussed twice a month—once to cover the next month's budget and once to compare the previous month's actual expenses with the budgeted figures. A foreman's interest in cost control is in direct proportion to the interest shown by his superior.

• **Income Control**—In a big company, responsibility reporting can be adapted to profit-and-loss responsibility. This is the best way to control decentralized operations. But it is important to confine income reports to executives who have actual responsibility over profits. Likewise, cost reporting is confined to managers who have responsibility for—and control over—the costs they are reporting on. ●

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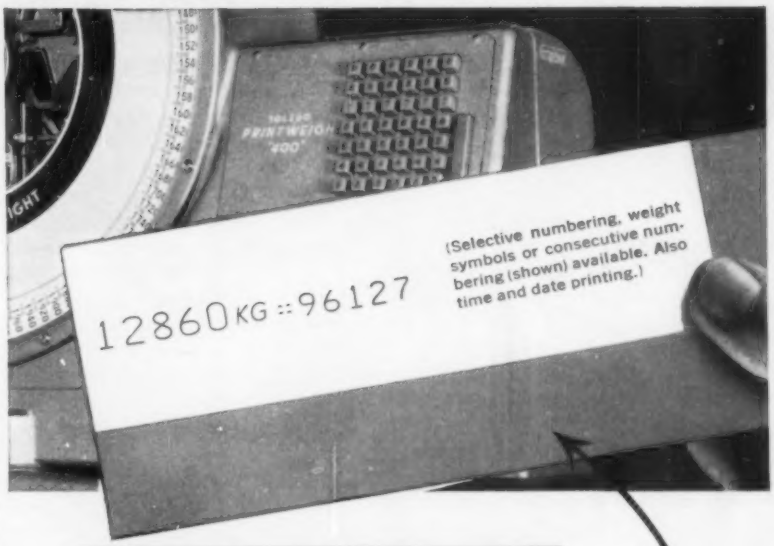
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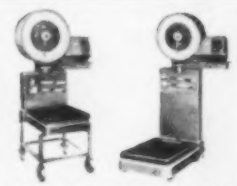
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Nurturing the Creative Man

A popular legend holds that every management executive should be "creative"—constantly producing bright, original ideas. Filling every job with a truly creative person, however, would probably lead to chaos.

ARE CREATIVE PERSONS nonconformists? Is there any relationship between intelligence and creativity? Does the scientist in a company laboratory have more in common with a poet or with the company president?

It is now possible to give tentative answers to questions such as these about one of man's most elusive attributes. But creativity cannot yet be predicted; its recognition rests on achievement rather than potential. What is known about creativity comes from studies of undisputedly creative people of recognized accomplishment — writers, architects, mathematicians, research scientists.

• **Business Problem**—Does creativity in its highest sense have any meaning for management?

The problem of creativity in business has been highly exaggerated in recent years. In the U.S.A., "creative executive" is widely and loosely used to describe an effective, dynamic manager, bursting with new ideas, as opposed to the dull, plodding "organization man."

Management's problem, however, is not to foster greater creativity in every job; a high level of creativity is not desirable even in many top management jobs. Rather management's problem is to foster a high level of performance from persons in creative situations—a company's "idea men." They may be research engineers, special staff advisors, advertising practitioners, or executives charged with planning and policy.

I. The Creative Man

Much of the research into creativity has been sponsored by the Carnegie Corporation of New York, a philanthropic organization established by the late Andrew Carnegie, the famous steel tycoon. In a recent report, the Carnegie foundation reviewed what is now known about creativity.

The U.S.A.'s Institute of Personality Assessment and Research (at the University of California) has identified three kinds of creativity:

1. An expression of the inner state of the creator. Into this category fall composers, novelists, poets, abstract painters.

2. A creative act that meets an externally defined need or goal, with the creator adding little of himself to the result. Engineers, inventors, research scientists are in this category.

3. A personal creation that meets the demands of an external situation. Architects are a classic example.

Now the question can be asked: Does the scientist in a company laboratory have more in common with the poet or the company president? The evidence points strongly to the poet. Creative people of all types have many traits in common.

• **Common Traits**—Creative people show little interest in small details, in the practical or the concrete. Rather they are concerned with meanings and implications.

They tend to have the same values. When tested for their concern with aesthetic, economic, political, social, religious, and theoretical values, highly creative people of all kinds show a marked disdain for economic values. In this respect, the research scientist obviously has more in common with the poet than the company president.

Creative people share another trait that is probably not possessed by most businessmen. Their strongest values are aesthetic and theoretical—values that are considered to be in conflict. This is interpreted to mean that creative individuals are more able than most people to give expression to opposite sides of their nature: to reason and to passion, to both science and art.

• **Two Questions**—Is there any relationship between creativity and intelligence? Put it this way: All architects are reasonably intelligent. But as far as psychologists can judge, highly creative architects are no more intelligent than merely competent architects.

Are creative people nonconformers? The Carnegie report says Yes —but their nonconformity lies in the realm of ideas rather than behavior. They are seldom emotionally unstable, sloppy, or Bohemian. "The truly creative person," the report states, "is simply independent."

II. His Working Habits

"The idea of a time clock is meaningless to a truly creative person," the Carnegie report says. "At times he may appear to be doing nothing at all; at other times he may work for 24 hours without eating or sleeping." His affairs may seem to be in a state of perpetual disorder.

Morris I. Stein, a psychologist who has studied industrial research chemists, says that highly creative men seem to know when to be disciplined and when not. They do not "attack" a problem; rather they tend to become part of the problem, "sensing its forces and following its leads." Instead of solving the problem, they let the problem solve itself.

Less creative workers seem more oriented toward quick achievements. They try to achieve a synthesis early, but then keep checking back, retracing their steps. In the long run, they are less efficient, and less likely to achieve brilliant solutions, than the man who moves slowly at first, marshalling his resources, then finally moves quickly to a solution.

• **Conflict**—The industrial scientist often is in conflict with his business environment, Stein suggests. Scientific creativity, he believes, occurs only when the scientist is fulfilling his professional role

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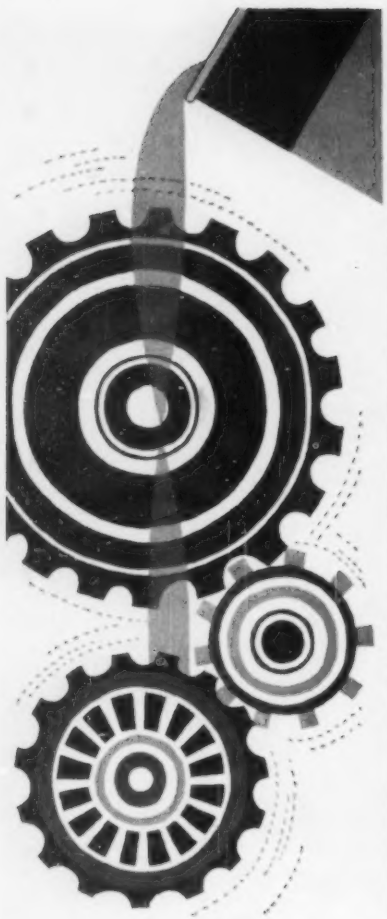

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—when a chemist, in other words, is acting as a chemist.

But a chemist cannot carry out his professional role without fulfilling another role: he is also an employee, he may have administrative duties, he certainly must live with other people under the same corporate roof. His social role involves the acceptance of tradition; his professional role involves the questioning of tradition.

The successful research worker is able to reconcile this conflict; he does not interpret, say, pressure to dress decently as an attack on his professional competence.

• **What is Needed**—Generally speaking, scientists are more creative when they feel slightly uncomfortable about their work. They are often forced to creativity by a condition of intellectual uncertainty. But too much uncertainty—anxiety—inhibits creativity. "What is needed then," the Carnegie report says, "is enough uncertainty to stimulate innovation, but enough security to offset the anxiety."

How can management create a situation that contains both high uncertainty and high security? Researchers are now investigating this problem, and the answers to date are not simple. There are several sources of security and insecurity. And what is a source of security to one man may be a source of insecurity to another.

One person, for instance, may have a good deal of inner security, but he may not generate many ideas from within. He may find his source of inspiration in his work: the problem itself may challenge him to creative action. Or colleagues may raise questions which have the same effect. (But note that highly creative people do not usually respond to "brain-storming" in groups or other artificial means of stimulating creativity.)

Another man may be highly aware of conditions of uncertainty—he may even feel anxiety about his work. But he may find needed security in reassurances and support from colleagues or superiors.

Until clearer guides to nurturing creativity are available, management would do well to heed Thoreau's . . . "he hears a different drummer. Let him step to the music which he hears, however measured or far away."●

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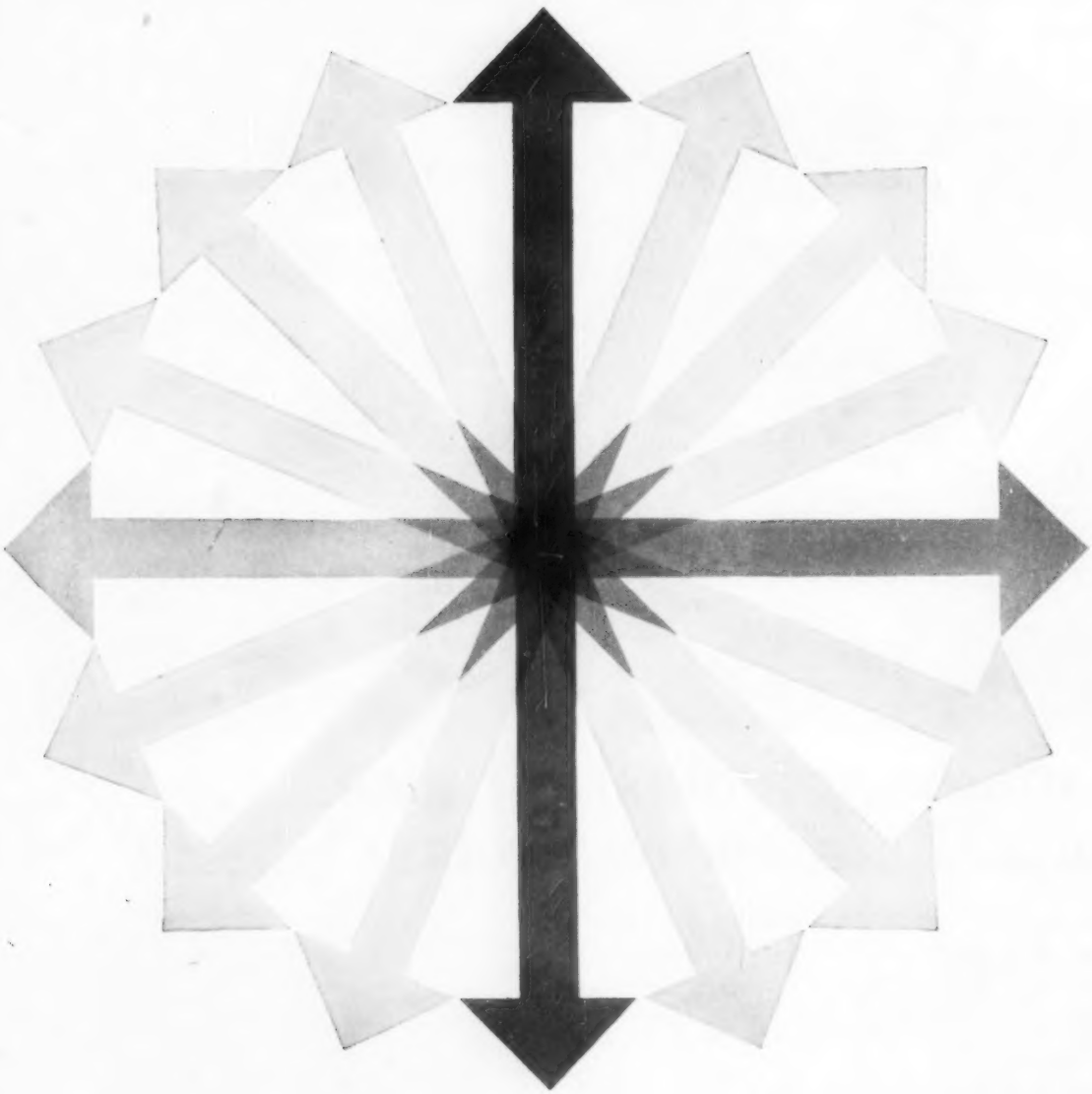

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What to buy?

When to buy it?

How to buy it?

An Approach to Long-term Buying

LONG-TERM purchasing by contract can save money. But the product or service bought must be suitable. The negotiations must be painstaking. And management must keep a sharp eye on changing international business conditions.

Talk about the merits of long-term buying comes naturally at a time when management everywhere is under pressure to reduce costs. Just as naturally, the directors are transferring some of that pressure onto company purchasing departments, which have proved in recent years that more sophisticated buying and inventory policies can effect important economies.

• **Controversy** — Not everyone agrees about the worth—or even the possibility—of long-term purchase contracts. Potential shortages (or surpluses), currency instability, frequent war or strike scares, and unreliable suppliers all make buying decisions more difficult. In the U.S.A., where there is a growing controversy about the merits and demerits of long-term buying, some businessmen call it the "lazy man's way to buy," and quite a few suppliers view the mounting interest in long-term buying as "just another cycle of price pressure"—the age-old practice of putting the thumb screws to the vendor.

Nonetheless, contract buying (which includes various techniques called term contracts, stockless purchasing, blanket buying, and the like) is growing. And Dr. Clyde T. Hardwick, Professor of Economics at Detroit University and a consultant to *Purchasing Week* magazine, believes it can be successful provided certain conditions are met.

• **Three questions** — The purchasing manager who would like to shape a long-term buying program should ask himself three questions. The first is: What kinds of products or services lend themselves to long-range buying?

Here, according to Dr. Hardwick, is how experienced buyers rate adaptability to long-term buying:

SUITABLE

Bulk raw materials
Standard production items
Electrical supplies
Maintenance supplies
Chemicals and solvents
General repair services
Standard printing, forms
Maintenance, spare parts

UNSUITABLE

Highly technical components
Specialized usage items
Quantity and price unknown
Articles of varying specifications
Low volume items
Highly competitive price items
Elaborate printing
Custom-made or job items

The second question that must be answered is: What economic conditions favor this kind of buying? Here are a few of Professor Hardwick's suggestions:

FAVORABLE CONDITIONS

Rising prices
Scarcity of materials
Level or stable market
Predictable demand
Reputable supplier

UNFAVORABLE CONDITIONS

Falling prices
Government-controlled market
Unstable market
Potential supply difficulties
Changing orders and specifications

Finally: What negotiating arguments can be developed to secure the cooperation of the supplier? "Negotiation," says Dr. Hardwick, "is the payoff." To help himself make a wise decision on long-range buying, the purchaser ought to consider several negotiating "rules".

First, he must anticipate the market conditions. The buyer informed of market trends and economic expectations will be best prepared to commit his company to a term agreement of three, six, or twelve months.

Second, the purchaser's proposition must be practical. It must take into account the seller's circumstances regarding time and place; the agreement must "have relativity" both to the buyer's and the supplier's needs and problems.

Third, he must be flexible in his choices of long-range buying tools. He must be prepared to introduce new products at new times with new suppliers. He shouldn't be committed unalterably to his suppliers for all time.

The buyer must develop strong arguments to persuade suppliers to take part in long-term agreements. These should stress:

—The mutual advantages of a single negotiating session instead of repetitive bid-taking.

—The economy of consolidating periodic needs into a single, quantity-type contract.

—The savings to the supplier in salesman time and effort.

—The desirability of knowing what share to expect for the period under contract.

—The advantages of planned warehousing and scheduled deliveries.

—The opportunity to fit long-term orders into the supplier's total production schedule, thus taking advantage of slack periods or open capacity.

Long-term agreements should be used as a tool to strengthen a company's supplier relations, not as a weapon to pressure him. ●

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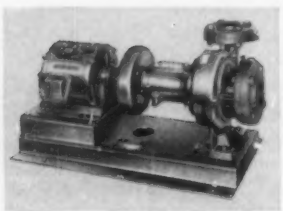

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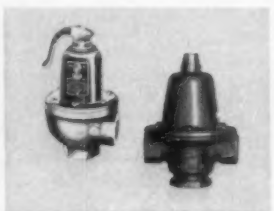

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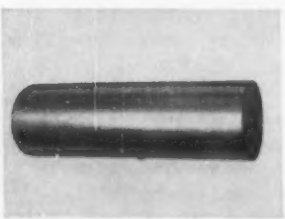
These fittings permit the use of a single pipe to act as both a supply and return main. They connect the risers to the main; assure proper water diversion into heating units, regardless of position in the system.



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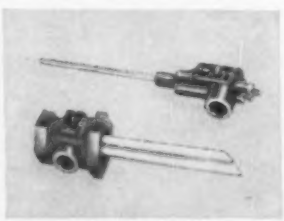

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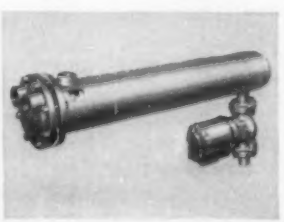

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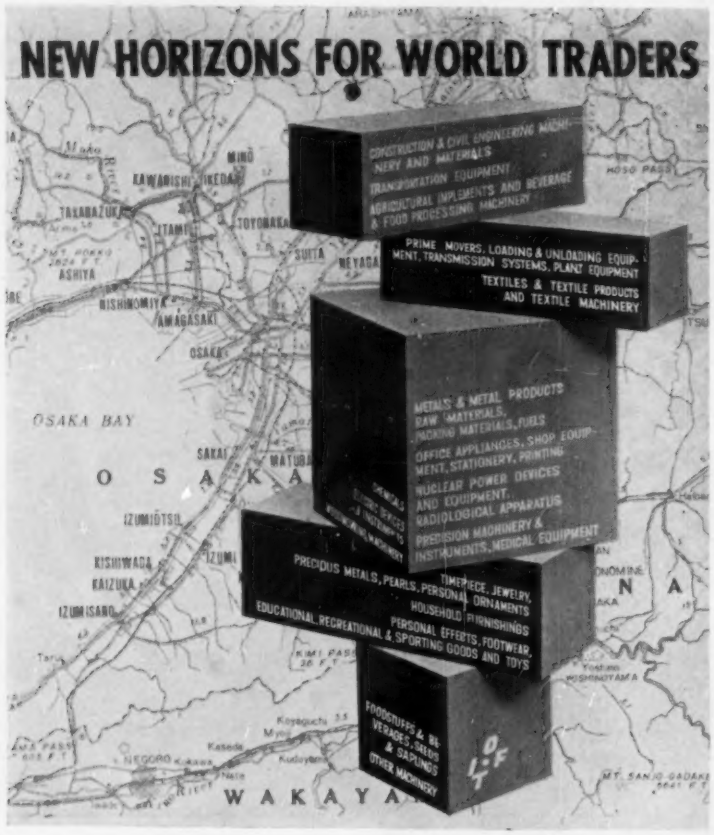

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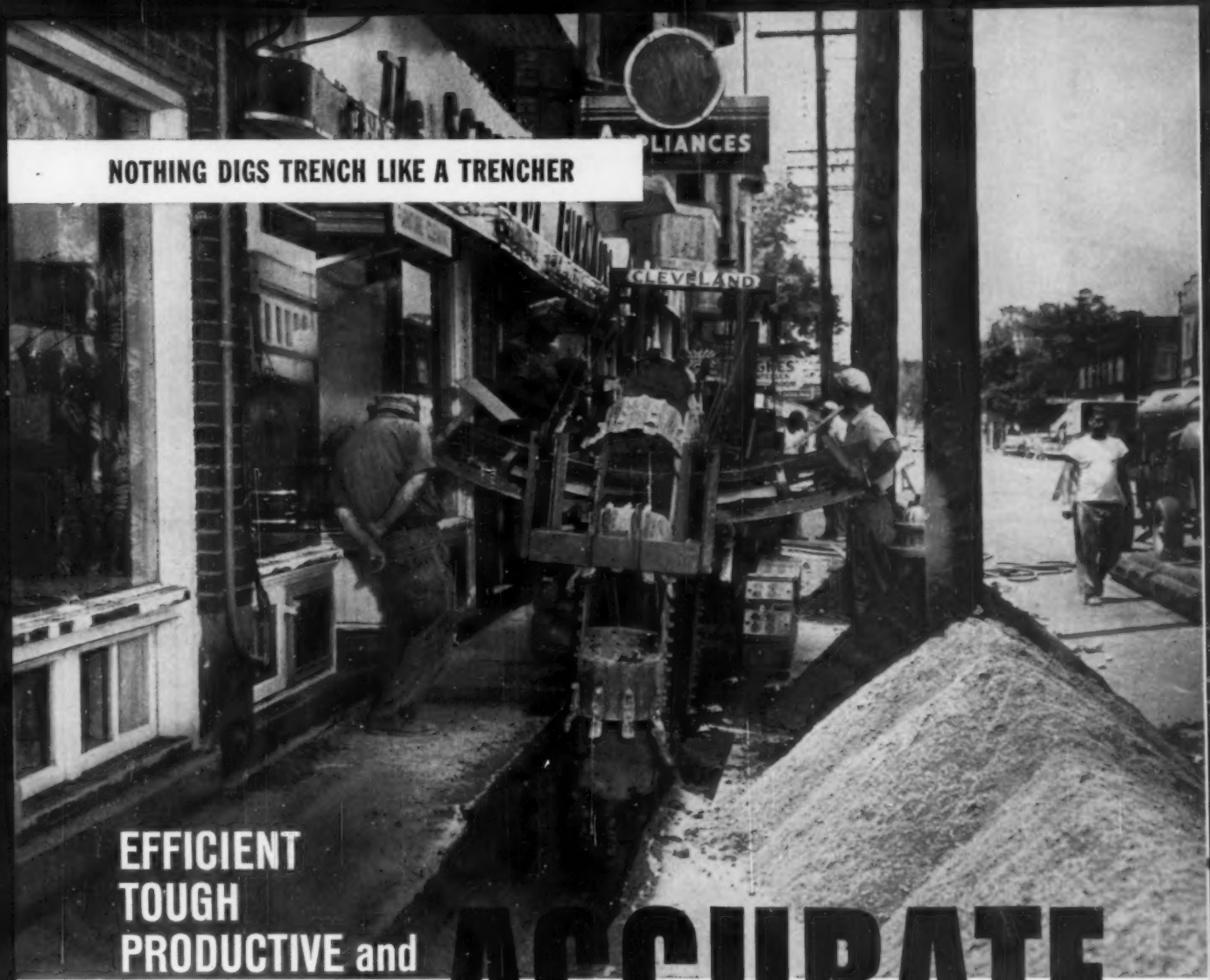

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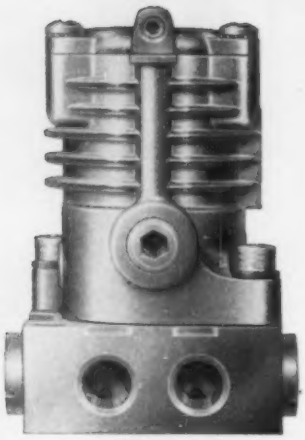

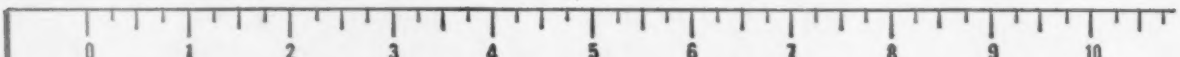

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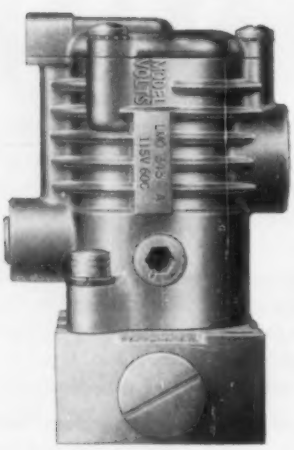

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Five monographs — in individually bound volumes—have been added to the MASTERS OF WORLD ARCHITECTURE series, covering the works of Louis Sullivan, Walter Gropius, Richard Neutra, Oscar Niemeyer and Eric Mendelsohn. *George Braziller Inc.,* 215 *Park Avenue South, New York* 3, *N.Y. Each volume:* 128 *pages,* $4.95.

PASSENGER LINERS, by Laurence Dunn, will tell you all about today's ships—routes served, year of construction, tonnage, speed, accommodations, and general descriptions of the vessels. There's a world index of passenger ship owners and builders. *John de Graaf, Inc.,* 31 *East* 10th *Street, New York* 3, *N.Y.* 476 *pages,* $20.00. . . . Also from de Graaf: The TANKER DIRECTORY OF THE WORLD 1961, edited by Leonard G. Fay, describes every tanker in operation up to January 1961. 304 *pages,* $12.00.

What is the single most valuable quality an executive can have? Should "job satisfaction" be a goal in itself? How do you get people to motivate themselves? These and other questions are answered in DEVELOPING COMPETENT SUBORDINATES, by James Menzies Black. *American Management Association,* 1515 *Broadway, New York* 36, *N.Y.* 128 *pages,* $4.50.

En Espanol: A new series of McGraw-Hill books in Spanish has been launched with the publication of Professor Charles P. Kindleberger's Economic Development, under the title DESARROLLO ECONOMICO. The second book in the series will be DESARROLLO INDUSTRIAL by Murray D. Bryce and the third DIRECCION DE EMPRESA by Professors Harold Koontz and Cyril O'Donnell. Others scheduled for publication in 1961 are: INGENIERIA ELECTRONICA by John D. Ryder; ELECTRONICA BASICA by Bernard Grob; LO QUE TODO SUPERVISOR DEBE SABER by Lester R. Bittel; and MATEMATICAS APLICADAS PARA INGENIEROS Y FISICOS by Louis A. Pipes. . . . Films too: McGraw-Hill is also offering films and filmstrips on employee relations, secretarial training, selling methods, and industrial and personnel administration with Spanish sound tracks and captions. *McGraw-Hill Book Company Inc.,* 330 *West* 42*nd Street, New York* 36, *N.Y.*

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The 1961 Yearbook of JAPAN's IRON AND STEEL INDUSTRY provides information on markets, exports, and production, plus technical developments. Also a directory of producers, exporters, and trade associations. *Tokyo Foreign Service, Central Post Office Box* 1157, *Tokyo, Japan.* 300 *pages,* $4.00.

The tenth edition of the HANDBOOK OF CHEMISTRY, edited by Norbert A. Lange, provides facts, formulas, descriptions to help solve chemical problems. There are sections on elements, inorganic compounds, analytical, physical, and industrial chemistry. *McGraw-Hill Book Co., Inc.,* 330 *West* 42*nd Street, New York* 36, *N.Y.* 1,969 *pages,* $9.00.

INTERNATIONAL BIBLIOGRAPHY OF ECONOMICS—printed in French and English—lists important economic studies made throughout the world in 1959. Subjects covered: economic activity, agricultural and industrial production, prices and markets, money and finance. *UNESCO, Palace de Fontenoy, Paris* 7e, *France.* 560 *pages,* $10.00.

WORLD AVIATION DIRECTORY, Summer 1961, edited by Marion E. Grambow, lists aviation companies and their officials—including the missile/space industries—throughout the world. *American Aviation Publications,* 1001 *Vermont Ave. NW, Washington* 5, *D.C.* 1134 *pages,* $13.00.

New guidebooks to Japan for European travelers: PARLEZ-MOI DU JAPON, in French, and JAPAN-KLEINER REISEFUEHRER, in German, present a broad picture of the country—past and present. *Japan Travel Bureau, No.* 1, 1-*chome, Marunouchi, Chiyoda-ku, Tokyo, Japan.* 160 *pages,* $2.00 *each.*

The TWELFTH ANNUAL REPORT ON EXCHANGE RESTRICTIONS —1961, published by the IMF, discusses latest developments in exchange practices, convertibility, multiple currency practices, bilateral and regional arrangements, advance deposits and capital payments, and surveys the exchange systems of the member countries. *International Monetary Fund,* 19*th and H Streets. NW, Washington, D.C.* 393 *pages.*

REPORTS, PHAMPHLETS

THE ENGINEERS BOOKSHELF (*Product Engineering,* July 3, p25) is a detailed bibliography of technical books for the design engineer. $0.50.

TOP TEN PLANTS OF 1960 AND 1961—a package of two *Factory* magazine reprints— provides data on 20 outstanding U.S. plants: size, materials handling, roof construction and insulation, parking areas, employee facilities, and other features. $0.35.

turn the page

NITROGEN—a special report by the editors of *Chemical Week* (Aug. 26, p33)—reviews rising world nitrogen production and its effect on world trade, and the chemicals and fertilizer industries. $1.00.

(For copies of the above McGraw-Hill reprints, write to The Editors, INTERNATIONAL MANAGEMENT, and your request will be forwarded to the publication in question.)

IBM IN FRANCE, by Boyd France, examines in detail the role that the French subsidiary of this office machine manufacturer has played reviewing its management, marketing, technology. *National Planning Assn., 1606 New Hampshire Ave., NW, Washington 9, D.C. 108 pages,* $1.00.

The QUARTERLY REPORT ON SWEDEN provides useful information on business, marketing, and advertising developments. Report #2 features consumer spending, chain store expansion, growth in textile imports, car advertising, new products and advertising and selling campaigns. *Wilh. Anderssons Annonsbyra AB, Kungsgatan 74, Stockholm, Sweden. Annual subscription:* $1.00, 6 *Sw. Kr.*, 7/-*sh.*

The Ford Motor Company will send you their GUIDE TO CUTTING TRUCK COSTS—a handbook of helpful information designed to save time and money. *Ford Motor Co., Dearborn, Mich., U.S.A.*

Establishing business headquarters in the U.S.? THE GUIDE TO LEASING SALES OFFICES OR DISTRIBUTION CENTERS IN NEW YORK CITY—printed in nine languages—offers basic financial facts about office space, services performed by real estate brokers and office designers, and outlines leasing procedures. Floor plans included. *Williams & Co., Inc., 15 West 44th Street, New York, N.Y.*

Personal Business

Big business in sailboats . . .

Sailors in the U.S.A. this past summer witnessed the flowering of one of the most phenomenal booms in pleasure-boat history. For this year the Alcort Sailfish and Sunfish came into their own as perhaps the most popular one-design classes ever.

Few experienced sailors sneer for long at the performance of these tiny, plastic-hulled craft. Their planing hulls give them great speed—as high as 24 km/hour. The Sailfish—about four meters long and the first of the species—sells in the U.S. for about $400 with nylon or Dacron sails. It still leads in popularity, but now the slightly larger Sunfish is gaining fast. Instead of Sailfish's flush deck, it has a well to put your feet into and is not quite so apt to tip over (both are easy to right alone, and most skippers spend some time in the water). It costs about $467. Incidentally the builder sells knock-down kits for home assembly—at a good saving.

The boom has made Alcort Inc. of Middlebury, Connecticut, U.S.A.—sole manufacturer save for a Canadian licensee—the latest success story in American leisure-time industry (page 4). Rushing to fill orders, Alcort predicts a growth rate of 30% yearly.

. . . big businessmen in sailplanes

Thanks to gliding, more and more British businessmen are getting away from it all by spending much of their weekends in detached airborne solitude, reports the magazine *Business*.

Like sailing, this is a sport that can be enjoyed at almost any age, is considered reasonably safe, and you don't have to be a millionaire to indulge in it.

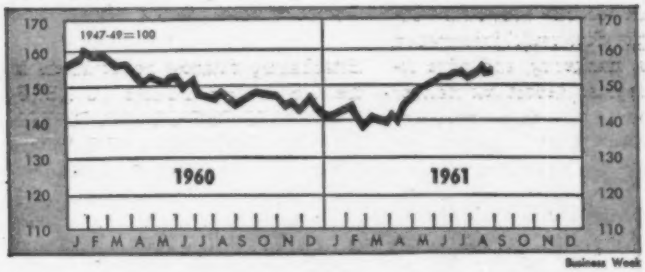
Average cost of gliding lessons—in England—is the equivalent of $110, which includes membership in a club. A top-performance sailplane can be bought for about $4,200, but most people make use of the club gliders.

The beauty of gliding: "It's exhilarating . . . it's third-dimensional, and no two flights are the same."

The last word: at work and play

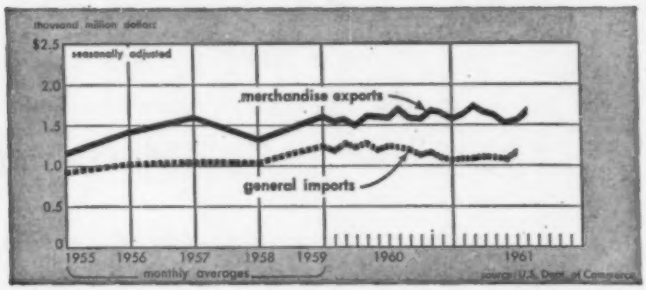
Executive chairs like this, tilting back like airplane seats, have headrests and matching footrests. From Drabert Soehne, Minden-Westfallen, West Germany . . . **Electrically-heated** socks may be the answer to the winter sportsman's prayer. Made of a mixture of wool and nylon, their "tiny warming wires" are heated by two six-volt batteries in a case carried at your waist. Available—without batteries—from Taylor Sales Co., Wayne, Pennsylvania. About $15.00 in the U. S. . . . **American shooters can now buy a launcher** that will hurl beer cans or other containers (preferably empty) high into the air for informal target practice. $23.50, from A. M. Johnson & Co. of Silver Springs, Maryland.

Business at a Glance



U.S. Business Trend

The midsummer lull hardly left a dent in the business index at left, and some observers are touting a new boom – even a "super-boom." Good omens abound: some easing of unemployment, the steel pick-up (see below), rising new orders and inventories, record personal income (consumers appear interested in the new 1962 autos), fewer business failures, rising defense outlays. Yet so far, prices have remained stable.



U.S. Foreign Trade

Exports showed a slight upturn in June-July if you take normal seasonal variations into account. For the year to date they are running at an annual rate 3% above the record 1960–right in line with businessmen's expectations (page 19). But there are recent signs of a slowing in foreign sales, owing perhaps to moderation of the boom in Europe. Meanwhile, there is little doubt that imports, which have been dragging, will be moving up smartly.

One Year of Scrap Prices in the U.S.A.

	Sept.	June	Mar.	Dec. '60	Year Ago	Percent Yearly Change
Steel, #1 hv, dlvd Pittsburgh, ton	$36.00	$35.00	$35.00	$27.00	$31.00	+16.1%
Steel, #1 hv, dlvd Chicago, ton	39.00	37.00	34.00	25.00	32.00	+21.9
Copper, #1 wire, dlr buy, fob NY, lb.	.245	.26	.225	.220	.235	+ 4.3
Copper, (hv) & wire mix, dlr buy, fob NY, lb.	.225	.245	.205	.200	.215	+ 4.7
Brass, light, dlr buy, fob NY, lb.	.125	.15	.115	.100	.110	+13.6
Brass, hv yellow mix, dlr buy, fob NY, lb.	.15	.15	.14	.118	.125	+20.0
Alum (cast), mixed, dlr buy, fob NY, lb.	.10	.10	.095	.09	.10	0
Alum (sheet), old clean, dlr buy, fob NY, lb.	.095	.095	.09	.085	.095	0
Zinc, old, dlr buy, fob NY, lb.	.03	.035	.025	.03	.04	–25.0
Lead, soft or hard, dlr buy, fob NY, lb.	.07	.07	.07	.078	.083	–15.7
Rubber, mix auto tires, dlvd Akron, ton	11.00	11.00	11.00	11.00	11.00	0
Rubber, synth butyl tubes, East, dlvd, lb.	.068	.063	.058	.063	.07	– 2.9
Polyethylene, clear, dlr, NY, lb.	.05	.07	.065	.10	.10	–50

hv–heavy melting grade; dlvd–delivered; dlr–buy-dealers' buying price

data: Purchasing Week

The Scrap Market: A Bustling Barometer of Business

The scrap market is cherished by many as a barometer of business, counted on to signal the trend ahead of time.

The U.S. steel scrap price is by far the most important indicator. The price swings can be volatile, moving up and down widely in a bustling market made by many dealers alert to the slightest change in the business weather. For a few months now the market has been bullish, sensing the pick-up in the steel industry and in the economy generally.

But there is one worry: Dealers feel that demand overseas (where much U.S. scrap is sold) is weakening, and may drop further. *Iron Age* magazine reported last month that shipping congestion in Japan has reduced interest in U.S. steel scrap for the present, and recent reported offers from European buyers have been at lower price levels.

Copper and brass scrap also reflect the overall trend, but tend to react more to the supply situation of the primary metal. And as the table above indicates, lead and zinc scrap suffer the same price weakness as primary (IM–Sept.,p15). Aluminum scrap behaves much like new metal – virtually static prices, but with some under-the-table price-shading (especially to buyers overseas who buy much of it).

Polyethylene scrap price weakness is undoubtedly part and parcel of the world's mounting excess capacity of this and certain other plastics.

McGRAW-HILL INTERNATIONAL MANAGEMENT'S

Last-Minute Memos

Silver relief? New gold? Some experts believe the unusually large shipments of silver arriving in Europe from Peking will slow the drain on U.S. Treasury stocks (IM—Sept, p3), now down to less than 198-million grams. About 85-million grams have arrived in Europe this year compared to 56.7-million for all of last year. Some experts also predict that the Communist Chinese are preparing to sell gold on the London Market. (Some gold sold this year by Moscow may have been on Chinese account.)

Free tools: Vocational trade schools in developing countries are receiving outdated U.S. machine tools free of charge. The tools are gathered from laboratories and shops in the U.S. by Technico, a two-year old, non-profit foundation which "adopts" and equips schools in Asia, Africa, and Latin America.

Your change, sir! International air travelers leaving the U.S. who need francs, lire, D-marks, sterling, can automatically get $4.70 worth from a machine by putting in a $5-bill. Thirty cents is the charge for using this new electronic change-maker which handles six different currencies.

New energy for steel: The coal industry is delighted about a new use for its product. Powdered low-volatile coal can replace coke successfully as a blast furnace fuel, according to National Steel Corp. of the U.S.A. Steelmen see it as a new contender in the growing fight between oil and gas for steel's energy market.

Captive fizz: A new ultrasonic machine made by the Electronics Assistance Corp. helps to keep the "fizz" in soft drinks longer. It drives "entrapped" air out of the bottle before capping by use of high-frequency sound waves.

Feeling the squeeze: Philips Lamp of the Netherlands (IM—Mar. p23) reported a 13.5% decline in earnings in the first half of 1961 despite sales up by 2.7% to a record 2,114-million guilders. The reason: heightening competition in Europe, especially in sales of TV sets which Philips says have "fallen short of the planning" in several countries.

Nigerian flour: Southern Star Shipping Co. has completed arrangements with the Nigerian government, and U.S. government and private investors, to build the country's first flour mill at a cost of $4-million.

Four-wheel-drive: Ferguson Research Ltd. of Britain has produced the first prototype of a radically new, four-wheel-drive station wagon, brainchild of the late Harry Ferguson. It's designed as a safe and comfortable family car in the £1,000 class. Interesting feature is the stepless hydraulic transmission, simplified to either forward or reverse. First cars will arrive in the showroom in late 1963.

Local talent: India, long dependent on foreign technical experts to prepare project reports, is now using more Indian personnel. The state-owned National Industrial Development Corp. recently set up a nucleus Technological Consultant Bureau, staffed by specialists in process and product design.

Tin-Plated competition: A new thinner tin plate costing 15% less than standard tin plate is on the market from two major U.S. steel producers —and aluminum producers, who claim they now control the U.S. citrus juice can market, have taken note. The price difference between the new and the old plate has forced aluminum producers to lower prices 7% to 9%.

Talented transistor: Radio Corp. of America has a new transistor which handles up to 40% of the jobs now done by more than 2,000 units. RCA claims it is the closest thing to a "universal transistor," and is introducing it this month to commercial and military markets. Price: about $12 in production quantities.

More information retrieval: Information for Industry, Inc. has ordered production of a new desk-sized information retrieval system designed to store and reproduce printed information. The system, indexed manually, stores, relocates and displays 500,000 pages of data on a single 121-meter scroll (see "Technology").

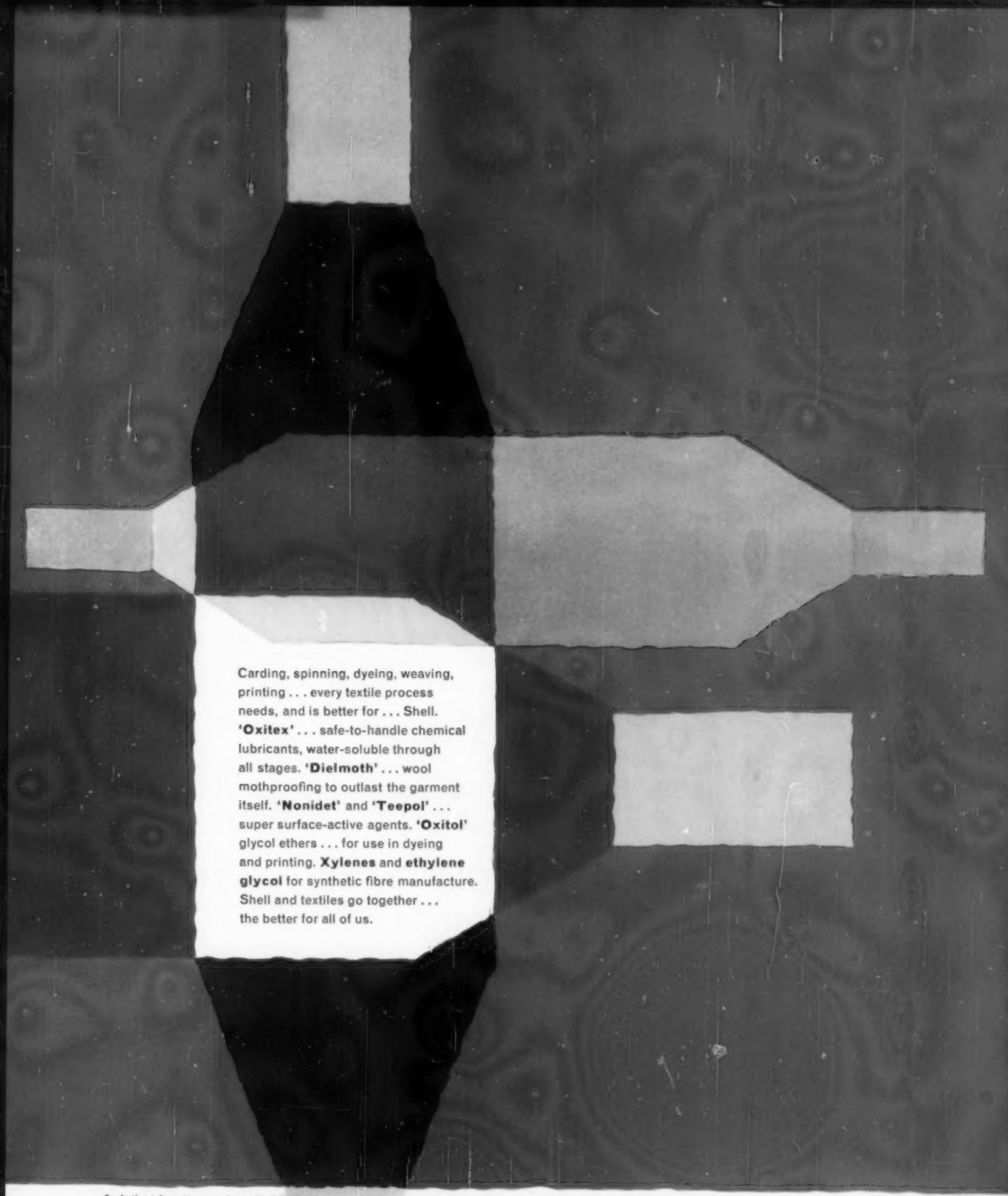
Money for Latin America: Geneva's IMEF Bank, heeding the Alliance for Progress' call for European investment in Latin America, has set up a private bank in Panama, the Swiss-Pan American Bank, to "forge an immediate link between private European capital and Latin America's business community." The bank starts with a capital of $1-million (see p21).

From Italy to Russia: Italy's A. Triulzi Co. will soon ship Russia a $220,000 die-casting machine to make cylinder blocks for the new Soviet mass production car.

From Central America: First loans from the Central American Development Bank will probably favor the chemical and textile industries, particularly those specializing in products not presently turned out in the four member countries. . . . In El Salvador, Esso and Shell oil companies may soon win approval to merge their original projects for separate oil refineries into a single one to be known as "Refineria de Acajutla, S.A. . . . A major fertilizer plant, owned by Fertica Co. of El Salvador, will be built in Costa Rica.

Buy Japanese: Here is what the Japanese Ministry of International Trade and Industry might do to protect Japan's machinery business: (1) oblige Japan buyers to give priority to Japanese goods; (2) revise laws to increase exports; (3) provide semi-government financing to help machine tool builders sell products to domestic customers on a deferred-payment basis.

Soup for Mexico: Campbell Soup Co. (annual sales $516-million) is building a "multi-million-dollar" condensed soup plant near Mexico City. The plant will begin operating in 18 months under the company's newly established Mexican subsidiary, Campbell's de Mexico, S.A. de C.V.

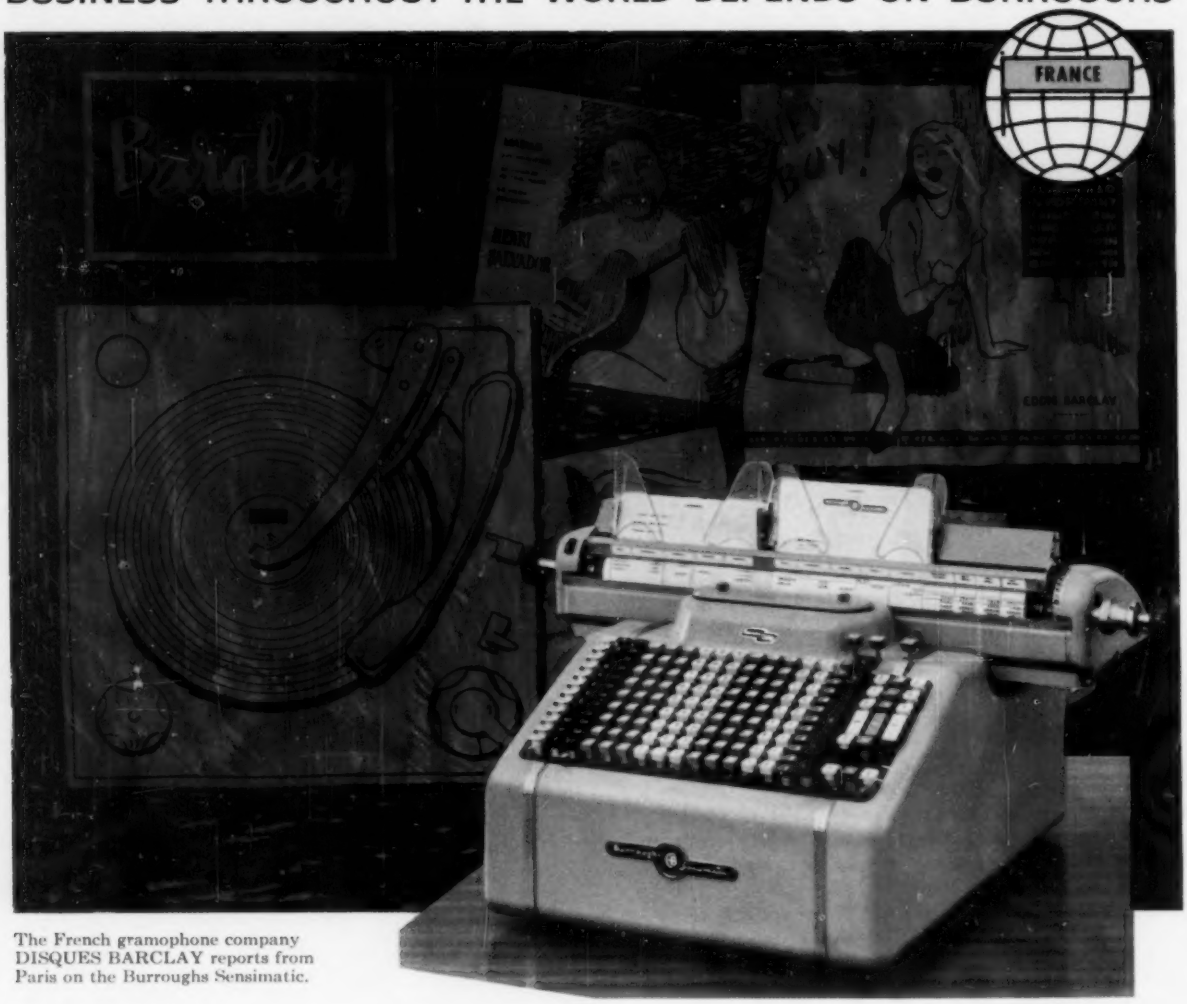


Carding, spinning, dyeing, weaving, printing . . . every textile process needs, and is better for . . . Shell. **'Oxitex'** . . . safe-to-handle chemical lubricants, water-soluble through all stages. **'Dielmoth'** . . . wool mothproofing to outlast the garment itself. **'Nonidet'** and **'Teepol'** . . . super surface-active agents. **'Oxitol'** glycol ethers . . . for use in dyeing and printing. **Xylenes** and **ethylene glycol** for synthetic fibre manufacture. Shell and textiles go together . . . the better for all of us.

For further information consult your Shell Company.

In industry and agriculture **Shell Chemicals** SHELL

BUSINESS THROUGHOUT THE WORLD DEPENDS ON BURROUGHS



The French gramophone company DISQUES BARCLAY reports from Paris on the Burroughs Sensimatic.

"BURROUGHS SENSIMATICS KEEP ACCOUNTING COSTS DOWN DURING RAPID GROWTH PERIOD"

"In four years our business has increased fivefold to over 5,000 retail accounts. To keep pace with the volume of paperwork which resulted, we had three Burroughs Sensimatic accounting machines installed. This enabled us to modernize our accounting procedures. Since then, our original staff has easily been able to process all accounts even during the peak winter months. Burroughs Sensimatics are keeping accounting costs to a minimum during the company's rapid growth period." M. Colas, Chief Accountant, Disques Barclay, Paris, France.

PHILIPPINES

SAN MIGUEL BREWERY, Inc. reports from Manila, "Our Burroughs Sensimatic accounting machines virtually eliminated overtime accounting costs. This alone saves us 3,000 pesos each year."

MEXICO

BANCO REFACCIONARIO DE JALISCO reports from Quadalajara, "We process checks twice as fast now, thanks to our Burroughs Sensimatic accounting machines."

Burroughs

CALL YOUR BURROUGHS MAN—The Burroughs representative in your area would be pleased to discuss with you the newest accounting techniques . . . to help you adapt Burroughs cost-cutting accounting systems to your business. For his address, consult your directory or write to: Burroughs Corporation, International Division, Detroit 32, U.S.A.

75 YEARS OF LEADERSHIP
Burroughs